

**AN INVESTIGATION INTO FACTORS AFFECTING HOUSING FINANCE  
SUPPLY IN EMERGING ECONOMIES: A CASE STUDY OF NIGERIA**

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**Declaration**

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## **ABSTRACT**

This study investigated factors affecting housing finance supply in Nigeria. Housing finance is a major factor determining the quality and tenure of housing consumption, the overall financial portfolio of the public and the stability and effectiveness of the financial system. In both developed and emerging economies, sovereign governments have intervened in the markets by setting up institutions characterised by a significant degree of regulation and segmentation from the rest of the financial markets and very often with governments providing subsidised housing finance. Attempts were made to develop an empirical model to reveal the underlying factors affecting housing finance in Nigeria.

Time series data from sampled Universal Money Deposit Banks (UMDBs) balance sheets between 2003 and 2007 were used to assess the ability of the financial institutions to engage in long-term lending. Additional instruments in form of questionnaire, for the sectoral allocation of loans and advances by these financial institutions were employed to gather information from Corporate Banking / Loans and Advances Managers coupled with unstructured interviews. Supplementary questionnaires were directed to the users of housing finance at the household level as control for validity to the research findings.

Applying a multiple regression approach, the model identified that housing finance supply in Nigeria is significantly driven by clusters of factors related to share capital and the reserves of the financial institutions. It is closely observed that housing finance models in the developed economies, which are largely financed by deposit liabilities, cannot be wholly adopted in the emerging economies. The implication for practice therefore is that financial institutions in the emerging economies must adequately increase their capital base for effective housing finance supply and introduce mortgage products with long-term tenure to actively mobilise resources for mortgage lending.

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## **DEDICATION**

This research is dedicated to the Almighty God and my dad-

Pa Ezekiel Babatunde Akinwunmi,

who passed away on the 16<sup>th</sup> December, 2008.

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## GLOSSARY

**Asset Specificity:** Human, physical, financial or other specific assets that tend to be relevant only for pre-specified applications, and may not be re-deployed to alternative applications at any reasonable cost. This feature involves dependencies in contractual or other relations among parties and implies costs of rigidity of resource allocation.

**Coase Theorem:** If there are no wealth effects and no significant transaction costs, then the outcome of bargaining or negotiated contract is efficient (apart from distributional considerations) and is independent of initial assignment of property rights or ownership.

**Competitive Equilibrium:** A composition of prices, quantities demanded and production patterns such that: every individual consumes according to his/her own preferences in accordance with utility maximisation, subject to the applicable budget constraints; every firm produces goods and services so as to maximise its profits; and the total supply of goods and services total demand for the same in any given time period.

**Diaspora Bonds:** A debt instrument issued by a country or a by a private corporation to raise long-term financing from indigenes living overseas (overseas diaspora).

**Economic Growth:** Long-term rise in capacity of a country to supply increasingly diverse economic goods to its teeming population, this growing capacity is based on advancing technology and the institutional and ideological adjustments that it demands.

**Efficiency:** The criterion of maximising performance with respect to a pre-specified objective such as wealth maximisation or utility maximisation. It could either be allocative efficiency, operational efficiency or informational efficiency.

**Externality:** Unintended effect of action / inaction of one set of entities on another set of entities, based on direct and indirect interdependence.

**Funds from Operations:** In REIT transactions, when depreciation is added back to the Net Income to arrive at internal funds for investment.

**General Equilibrium Economy:** An economy where all markets are in equilibrium simultaneously, with balanced demand and supply and the prices do not vary.

**Institutions:** A set of formal or informal rules of interaction and governance of resources of all types; these are stipulations that structures – political, social and economic interactions do consist of both formal rules (as in the laws and regulations) and informal constraints (such as customs and traditions).

**Market:** An institution with its rule governing buying and selling of goods and services as a forum of organised exchange.

**Model:** It is a construct or diagram that explains the underpinnings of a theory base; as it is, the model is not the theory and therefore will not be tested or validated (Bodgan & Biklen (2007). Daresh and Playko (1995) describe a model as interrelationships of variables or factors in a theoretical statement depicted graphically. These graphic

depictions or theoretical models constitute part of the basic theory-building cycle (Daresk & Playko 1995). Again, a model is a description used to show complex relationships in an easy-to-understand term (Stoner, Freeman & Gilbert 1995; Lunenburg & Irby 2008)

**Off Balance Sheet Transactions:** These are bank transactions that are not recorded on the bank's balance sheet. Examples are letters of credit and letters of guarantee.

**Open Market Operations:** It is a major tool for liquidity management in enhancing the efficiency of the money market. It involves the buying and selling of money market securities by the Central Bank aimed at expanding or contracting the money supply and influencing money market rates of interest.

**Optimality:** Maximisation or minimisation of an objective function subject to a set of constraints over a defined time horizon.

**Pareto Optimal:** A situation from which any deviation could not increase the welfare of any party without decreasing that of one or more other parties.

**Securitisation:** The process by which existing non-negotiable debt (such as bank loans) is changed into a security which is marketable. The term can also be used in a broader sense to indicate the change of procedure through which debt which was formerly obtained by bank lending (i.e. non-negotiable) is issued in marketable forms.

**Transaction Costs:** These are costs of undertaking a transaction, including search and information costs and monitoring – enforcement costs of implementing a transaction; and the opportunity costs of non-fulfilment of an efficient transaction.

**Yield to Maturity:** An estimate of the present value of cash flows emanating from a fixed rate bond, that is, the discounted sum of coupon payments and net principal, adjusted for any accrued interests, using that yield as the investment rate.



## **ABBREVIATIONS**

**CBN** – Central Bank of Nigeria

**CRT** – Credit Risk Transfer

**CDs** – Certificate of Deposits

**DFID** – Department for International Development

**EDL** - Estate Development Loan

**EIB** - European Investment Bank

**FDIC** – Federal Deposit Insurance Corporation

**FSA** – Financial Services Authority

**FGN** – Federal Government of Nigeria

**FMBN** – Federal Mortgage Bank of Nigeria

**HCDL** - Housing Co-operative Development Loan

**IFC** – International Finance Corporation

**MBS** – Mortgage-Backed Securities

**MFIs** – Micro-Finance Institutions

**NDIC** – Nigeria Deposit Insurance Corporation

**NSE** – Nigerian Stock Exchange

**PFAs** – Pension Fund Administrators

**PMIs** - Primary Mortgage Institutions

**REITs** – Real Estate Investment Trusts

**SEC** – Securities Exchange Commission

**SSA** – Sub-Saharan Africa

**SAP** – Structural Adjustment Programme

**UMDBs** - Universal Money Deposit Banks

## **CHAPTER ONE**

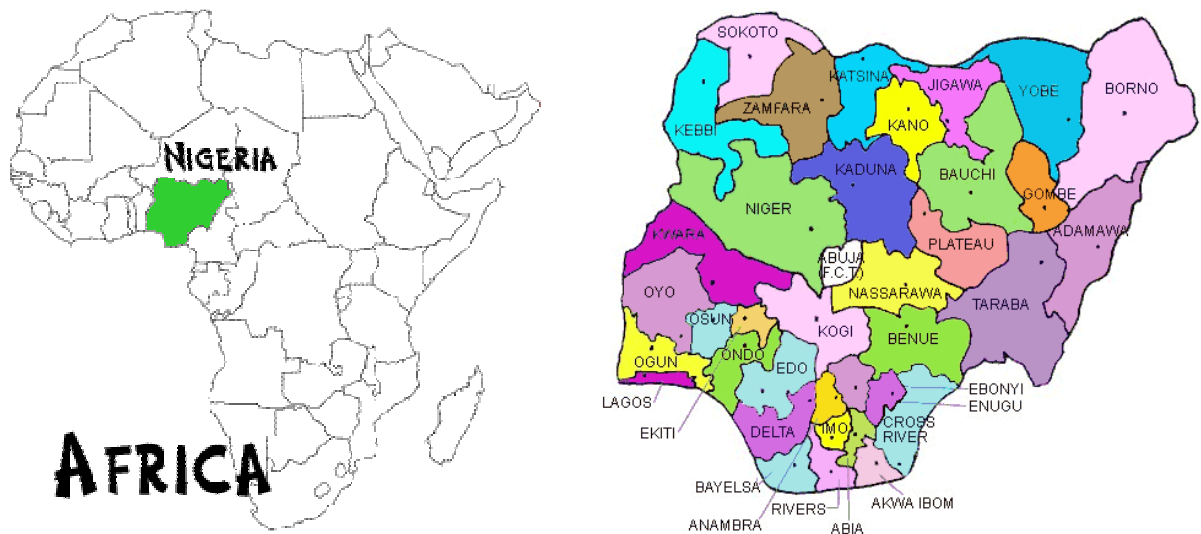
### **INTRODUCTION AND BACKGROUND TO THE STUDY**

#### **1.1 Introduction**

Housing is an essential need of man, which is why it is described as a *sine qua non* of human living (Yakubu 1980; Olotuah and Aiyetan 2006). Consequently, the priority accorded the issue of housing is immense; to most governments, the availability of sufficient but basic housing for all is often stated as a priority for enhancing the social needs of the society. According to Onibokun (1998) and Nubi (2008), habitable housing contributes to the health, efficiency, social behaviour and general welfare of the populace. Apart from providing man with shelter and security, housing plays a major role in serving as an asset (Poole 2003; Alhashimi & Dwyer 2004).

For a typical house-owner, the house is a major asset in his portfolio and for many household, the purchase of a house represents the largest (and often only) life long investment and a store of wealth (Goodman 1989; Sheppard 1999; Malpezzi 1999; Bundick and Sellon Jr 2007; Dickerson 2009). Furthermore, Bardhan and Edelstein (2008) argue that housing represent a large proportion of a household's expenditure and takes up a substantial part of lifetime income. The provision of housing services depends mostly upon a well-functioning housing finance system (ibid). The consideration of acquiring a house is driven by the cost of acquisition and various government economic policies which could be fiscal or monetary (Giussani and Hadjimatheou 1991) and even depending on the economic system adopted in a country.

**Fig 1.1: Maps of Africa and Nigeria**



Nigeria is located in West Africa and share land borders with the Republic of Benin in the west, Chad and Cameroon in the east and Niger in the north. It is bounded in the south by the Atlantic Ocean. Despite recent real growth rate in its economy of 5.63 percent in 2006, 7.64 percent in 2007 and IMF projection of 9 percent in 2008, the income earned by workers are generally low, the minimum monthly wage is US\$65 (N7,500) (Rate at US\$1=N115).

The housing deficit in Nigeria stands between fourteen and seventeen million up from eight million in the 1980's (Omirin and Nubi 2007). It is also estimated that over seventy two million are either homeless or live in rented substandard homes (ibid). For the housing deficit to be bridged, between N42trillion to N56 trillion would be required with an estimate of average cost of N3.5 million (\$30,000) (Rate of US\$1=N115) per housing unit (Ola 2006), which excludes cost of the land that are generally prohibitive in the urban centres.

Housing finance is a major factor determining the quality and tenure of housing consumption, the overall financial portfolio of the public and the stability and effectiveness of the financial system. A well-functioning mortgage market is considered by Jaffee and Renaud (1977), Renaud (2008) and Dickerson (2009) to have large external benefits to the domiciled national economy like contribution to economic growth and improved standards of living. With the absence of a well-functioning housing finance system, a market-based provision of housing would therefore be lacking (Kim 1997; Quigley 2000; Warnock & Warnock 2008).

In most of the developed economies, their housing finance supply systems are considered to be operationally efficient in terms of intermediation (Kim 1997 and Cho 2007). These improved efficiencies include reductions in the cost of credit intermediation. In countries like Britain, Denmark and United States, outstanding mortgage loans are almost equivalent to their GDP (see Table 1.1). Over 90 percent of mortgage loans in Britain and about 70 percent in the EU (see Table 2.1) are sourced from deposit taking institutions. In Britain, outstanding mortgage loans at the end of 2006 were over £1,000 billion with about 60 percent provided by commercial banks (Boleat 2008 p.55).

In societies like Nigeria, where social housing is not on the priority list of government, the housing affordability would have to be looked at from the point of view of individual's ability to raise money needed to meet the cost or price of their housing needs. The first source of funding for individual is their income. This is often the cheapest source because there is no payment of extra cost in form of interest. The problem that arises in case of individuals in the emerging economies is that income levels are generally low.

The emerging economies had been described with different words, but the main focus has been those countries that are undergoing rapid growth. The word “emerging economies” came into being in the 1980s, introduced by the then World Bank economist, Antoine van Agtmael. The 2008 Emerging Economy Report defines emerging economies as those regions of the world that are experiencing rapid informationalisation under conditions of limited or partial industrialisation.

While countries like China, India, Pakistan, Mexico, Brazil, Peru, Chile, Colombia and Argentina has been cited as emerging economies, the term “rapidly developing economies” is now being used for emerging markets like the United Arab Emirates, Chile and Malaysia. However, new terminology such as BRIC and BRIMC is presently being used for the largest developing countries of Brazil, Russia, India, Mexico and China.

## **1.2 Justification of the Study**

Poverty has been defined since after the World War II in monetary terms, using level of income or consumption (Grusky and Kanbur 2006; Handley et al 2009) and the poor are considered as those below a given income/consumption level or poverty line (Lipton and Ravallio 1993; Handley et al 2009). However, the multidimensional approach (Subramanian 1997), basic needs approach (Streeten et al 1981), the capabilities approach (Sen 1999) and human development approach (UNDP 1990) have all complemented the basic economic definition earlier on used.

Different authors have taken positions on definitions of income to apply to their works. In the United States, Reid (1962), Muth (1960), Lee (1963 & 1968) and recently Chiuri and Jappelli (2003) all applied permanent income variables in their housing models. Whereas,

Whitehead (1971) and Karley (2008) argued that the relevant income variable is *personal disposable income*, in that it is out of the disposable income that the lender would calculate amount the borrower can afford to spend on housing. Therefore, in the study, the income variable is to be considered as the personal disposable income in line with Whitehead (1971) and Karley (2008) definitions.

When housing affordability is being discussed, there is a relationship between the household income and the expenditure on housing. Bramley and Karley (2005); Robinson, Scobie and Hallinan (2006); Karley (2008), a Ghana study, considers housing affordability as the ability of a household to meet the monthly mortgage or rent payment aggregated as a third of the total household income. Furthermore, Yamada (1999) observes that the smaller the income, the higher the proportion apportioned to rent payment and in Edwardian Britain, a third of income of the poor is expended on rent payment (Englander 1983, as cited by Yamada 1999). When less than 30 percent of pre-tax income is spent by a household on rent and utility bills, housing is considered as “affordable” to the household. When a household spends more than 30 percent, they are considered as cost burdened and spending on housing and utility bills in excess of 50 percent are considered as severely cost burdened ( Belsky 2005 and Nubi 2008). However, Hulchanski (1995) put it in a context “that a household is said to have a housing affordability problem when it pays more than a certain percentage of its income to obtain adequate and appropriate housing.

For instance, according to the 2007 World Development Indicators ( 2007 World Bank publication), up to 75 percent of the population in Sub-Saharan Africa (SSA) live on less than US\$2.00 a day (see Table 3.1). Since 1990, income poverty has fallen in all regions

of the world except SSA, there has been an increase both in the incidence and absolute number of people living in income poverty. Hammond et al (2006b) argues that there are manifold of conditions that are contributing to poverty level in SSA which ranges from corruption, political instability, unfair international trading rules, outdated policies and laws, poor social and economic infrastructure, weak capital and financial markets and so forth. Out of about 300 million people living in SSA, almost half of the region's population are living on less than US\$1 a day (UNDP 2006 p.269; ILO 2007; Handley et al 2009 p.1)

Conventionally, particularly in the western world, the financial institutions grants loans equivalent to three to five times the annual income of potential borrowers. The point has already been made that income is generally low in emerging economies and the majority of the populace might not even have bank accounts (Moss 2003). A large percentage of potential borrowers for housing acquisition may not qualify for the loan on this basis of this criteria or the financial institution may require that they raise the remainder of the amount needed from other sources possibly family members or from friends. It might even be necessary to go into partnership with family members or friends through an equity finance model termed shared ownership (Caplin et al 1997; Barry et al 2006 and Whitehead & Yates 2007).

The Financial Sector is made up of the wholesale, retail formal and informal financial institutions operating financial services to consumers, businesses and other financial institutions (Soyibo 1996; DFID 2004). They are made up of commercial banks (called UMDBs in Nigeria), stock exchanges, insurance companies, microfinance institutions and private money lenders. For the supply side of housing finance in Nigeria, the

contributions of the commercial banks which are termed Universal Deposit Money Banks (UMDBs) to housing finance is being considered. There is no single model of institutional development in housing finance. While commercial banks are considered as major mortgage lenders in the United Kingdom, Asian and African countries, the largest originator of mortgages in the United States are the mortgage banking companies (Crane & Bodie 1996; Kim 1998). The focus on the commercial banks is important because they play important roles in their domiciled economies and even in the global economies (Berger et al 1995; Betubiza & Leathan 1995). For their contributions to the well-being of an economy, the commercial banks are the first set of institutions to be subject to internationally co-ordinated capital regulation (ibid). Effective financing of the economy is measured by the ratio of the banking system credit (bank credit ratio) to the core private sector to GDP (Levine 2002). The banking system credit is made up of lending by all deposit-taking institutions and excludes what is lent to the public sector namely central government, local government and public enterprises. The Nigerian Financial System has come of age with the first commercial bank established in 1894 and the country's financial sector has improved in both depth and breadth from 19.8 percent in December 2006 to 21.1 percent as at December 2007. The depth of a financial system is measured by the ratio of  $M_2$  to GDP and the intermediation ratio (currency outside the banking system against broad money supply  $M_1$ ). The intermediation ratio declined from 18.8 percent in December 2006 to 15.2 percent as at December 2007. Out of the total credit outstanding of N4,500 billion, the combined outstanding mortgage and building construction assets of the UMDBs, FMBN and PMIs as at December 2007 was N173 billion (CBN 2007) which was 0.76 percent of 2007 GDP, compared to 2 percent of GDP in 2006 as shown in Table 1.1 below:



**Table 1.1: Mortgage Outstanding as Percentage of GDP (2006)****Source: Saravanan (2007) and Akinwunmi et al (2008a)**

Country	Mortgage Outstanding as Percentage of GDP
Morocco	2%
Nigeria	2%
India	4%
Korea	14%
Thailand	18%
Malaysia	23%
Taiwan	37%
Hong Kong	60%
Germany	52%
Singapore	68%
USA	86%
UK	72%
Denmark	90%

It was postulated by Boleat (2008) that there is a strong correlation between economic development and the size of the mortgage market. From Table 1.1, the ratio of mortgage outstanding to GDP in Nigeria is low compared with other emerging economies like Thailand with a ratio of 18 percent, Malaysia 23 percent and Taiwan at 37 percent. The minimum ratio for any of the developed economies, which is Germany, had a ratio of 52 percent. It is therefore important to investigate factors that affect the supply of housing finance in Nigeria.

The 1970's witnessed the transformation of the Nigerian economy from one dependent on agriculture to an economy heavily dependent on oil. For instance, the share of agriculture in Gross Domestic Product (GDP) declined from about 40 percent in the early 1970's to about 20 percent in 1980 (Ake 1996) By the latter year, oil accounted for about 22 percent of GDP, 81 percent of government revenue and 96 percent of export earnings (ibid) and by year 2007, it accounts for 40 percent of GDP and 80 percent of government earnings (The Economist 2008a).The heavy dependence of the country on oil and

imported inputs rendered the economy highly vulnerable to external shocks. Consequently, with the collapse of the world oil market which started in mid-1981, an economic crisis emerged in Nigeria although its magnitude and duration could not be recognised at that time.

Real estate assets account for between 7 percent and 20 percent of GDP in country around the world, and housing expenses accounts for between 15 percent and 40 percent monthly expenditure (OPIC 2000). Therefore, any system that is supporting its housing development is contributing to the long-term growth and stability of the country as well as the welfare of its people. With the recent trends in real growth rate in Nigerian economy put at 5.65 percent in 2006, 7.64 percent in 2007 and an IMF projection of 9 percent growth rate in 2008, the income earned by workers are generally low, with the minimum monthly wage at US\$65 (N7,500) (Rate@US\$1=N115). To illustrate the consequences of this low income, consider a country like Nigeria in which the average price for a housing unit is about N3.5million (\$30,000) (Rate@US\$1=N115) (Ola 2006). It follows that if it is assumed that it will take as many as 75 percent of the population over 12,962 day's wages (which is equivalent to 74 percent of their expected life span, typical life expectancy in Nigerian being 48 years) (The Economist 2008a), to raise the money from their income, if it is assumed, quite unrealistically though, that all their earnings for this period are saved up to meet just their housing needs. Certainly, this is an undesirable solution, which by itself represents a justification for a speedier alternative source of funding to be sort. What then are the alternatives available? To what extent are these alternatives suitable to the unique economic conditions of the emerging economies? Therefore, the research questions are stated below:

### **1.3 Research Questions**

Having discussed the background to the study and justification for the research, the research questions are then posed as follows:

- (1) Can the economic model of providing housing finance in developed economies be adopted in the emerging economies?
- (2) To what extent are these alternatives suitable to the unique economic conditions of the emerging economies?
- (3) The supply of housing finance is demand-driven, to what extent are demands being made?
- (4) In an effort to meet demand for housing finances, are resources being effectively mobilised for economic development?

### **1.4 Aim and Objectives**

The study is investigating factors affecting the supply of housing finance in emerging economies: A case study of Nigeria with the following objectives, meaning of the objectives and research methods adopted.

<b>Objectives</b>	<b>Meaning</b>	<b>Research Methods</b>
(1)To carry out an extensive critical review of existing literature on supply of housing finance in developed economies in order to identify key factors that have contributed to the operational efficiencies and inefficiencies of their housing finance supply.	Examine and evaluate the existing body of knowledge of eminent authors on the supply of housing finance in developed economies and identify the unique characteristics of the housing finance supply models employed in these economies.	-Identify the relevant literature on housing finance supply in the developed economies. -Review the literature related to housing finance in the developed economies -Highlight the strengths and weaknesses of housing finance supply in developed economies -Identify the gaps in housing finance supply of

		developed economies.
(2) To carry out an extensive critical review of existing literature on the supply of housing finance in emerging economies in order to identify key factors that have influenced the operational efficiencies and inefficiencies of their housing finance supply	Examine and evaluate the existing body of knowledge of eminent authors on supply of housing finance in emerging economies and identify the unique characteristics of their housing finance supply models employed in these economies.	<p>-Identify the relevant literature on housing finance in the emerging economies</p> <p>-Review the literature related to housing finance in the emerging economies.</p> <p>-Highlight the strengths and weaknesses of housing finance supply models in the emerging economies</p> <p>-Identify the gaps in housing finance supply model of the emerging economies.</p>
(3) To conduct a critical analysis of housing finance supply characteristics in both developed and emerging economies in order to identify the strengths and weaknesses in their housing finance supply.	Bringing out the relevant characteristics of housing finance supply in the developed economies that the emerging economies can adopt and adapt to their local environments	Comparative analysis methods will be used to assess the qualitative data. This will lead into identifying the gaps in the body of knowledge on housing finance supply in emerging economies: A case study of Nigeria.
(4) To construct a Conceptual/Theoretical model based on the analysis of the literature review for evaluating factors affecting housing finance supply in Nigeria.	Models give an idealised representation of housing finance supply situation in Nigeria. The presentation of a model portrays a comprehensible and usable form of the housing finance supply situation.	Objectives 4-6 are considered to be quantitative aspect of the research. However, to construct an effective framework for housing finance supply and variables affecting the supply as the independent variables are reviewed.
(5) To carry out primary data collection on housing finance supply in Nigeria and to analyse the data in order to test the validity of the housing finance model developed	Quantitative analysis is about examining the measurements of features of housing finance supply in an attempt to understand what the measurements reveal about the features of housing finance supply.	Secondary data in form of series data are to be extracted from the balance sheets of the banks, structured questionnaire to be adopted in data collection from the banks. The target population of the respondents would be the Loans and Advances Managers in the Universal Deposit Money Banks (UMDBs). Quantitative data will be analysed using statistical procedures such

		as Microsoft Excel/SPSS. Also, structured questionnaires are to be targeted at the household/microeconomic level for housing finance demand.
(6) Compare theory with outcome of the research in order to test, conclude and make policy recommendations.	To compare the result of the research with the theory behind the work	Data analysed and inferences to be made. The result of the research to be presented as research dissemination through conferences and journal paper

### **1.5 Research Methodology Employed**

The methodology adopted in this investigation is mixed method research. It is considered as a research design and method of inquiry that dictates the direction of the collection and data analysis whereby the collection and analysis of data has a mix of quantitative and qualitative research processes (Creswell and Plano Clark 2007). Therefore, the data analysis for this research has largely being quantitative in nature. This is due to the fact that various studies in the area of housing finance have been mainly qualitative and descriptive in nature (Warnock and Warnock 2008). This study being investigative in nature, using quantitative approach for data analysis would enable the research to extract the variables that drives housing finance supply in Nigeria.

### **1.6 Limitations and Assumption of the Study**

The outcome of a research might be dependent on various factors as analysed by Walker (1997), these factors include the choice of an appropriate research methodology, how reliable the data collected are and the application of appropriate statistical tools, if relevant.

Firstly, embarking on this type of project is considered to be capital-intensive in nature and there is a time limit, within which the thesis must be submitted. Therefore, funds and time-limit have been the major limitation to the output of this study.

Secondly, the study used Nigeria as the case study country. In the developed economies, there are database where data could be extracted for research purposes, but in the emerging world, having access to data are always difficult. Data were extracted from the balance sheets of the sampled Universal Money Deposit Banks (UMDBs), which is considered to be the best source for housing finance data now. However, we had experienced instances where limited liability companies were producing more than a balance sheet in one financial year, which might make the extraction of data from this source not so reliable.

Again in Appendix I, the sampled UMDBs were requested to complete the sectoral allocation of their lending for the last five years (2003-2007), since these figures were not statutorily declared in their balance sheets. One cannot be categorical to vouch for the figures given by the banks considering the level of competition amongst the banks in Nigeria. The general belief is that any information given out goes to their competitors. This limitation also buttress the observation made by Churi et al (2002 p.898) that any attempt to select banks suffering from any negative capital shock, since the respondents do not know what would be the outcome of figures being given out, runs into a small sample problem.

Having stated the above limitations, it is assumed (the assumption for the study) that the research is carried out in an imperfect market. In an imperfect market, information is not

freely available and transactions costs are freely fixed without taking cognisance of government regulations. Having access to information is considered as a rare privilege and when it is available, it is hoarded with the mindset that it might put the financial intermediary in a privileged position to improve their profitability level.

### **1.7 Organisation of the thesis**

The thesis consists of ten chapters which are organised as follows:

Chapter One discusses the general background to the research in form of introduction, justification of the study, aim and objectives, research questions, research methodology adopted for the study. Towards the end of the chapter, the outline of the thesis was presented.

Chapter Two addresses the theoretical housing concept and issues of housing problems generally. Different forms of welfare states in the developed economies were highlighted. This is followed by the theoretical finance concept and housing finance demand and supply in developed economies. Other relevant issues of importance in this chapter was highlight of factors affecting housing finance supply in developed economies that have contributed to the relative efficient nature of their mortgage market.

Chapter Three starts with the definition of emerging economies, in order to know the attributes of those economies that were ascribed as emerging market economies. This is followed by discussions on the housing sector and housing finance supply in the emerging economies. Factors that have affected housing finance supply and stunted its efficiency in emerging economies were raised. Taking cognisance of the fact that economic and financial situations are not static, various innovative means of mobilising

resources for housing finance supply like diaspora bonds and migrant remittances are discussed. Highlights of issues in housing finance supply and deficiencies in past studies in the emerging economies were looked into.

Chapter Four discusses the theoretical perspective of financial intermediation and housing finance supply in emerging economies. The most important obstacle to an efficient financial intermediation process, which is the macroeconomic situation, was highlighted and the remedy of various governments in form of interest subsidy was noted.

Chapter Five looks at the issue of housing finance in the case study country (Nigeria). The housing sector and the housing finance supply by different types of financial intermediaries were discussed. The effects of various macroeconomic policies introduced by the central government in an effort to encourage financial intermediaries to lend towards housing were highlighted. An appraisal of factors that have theoretically affected the supply of housing finance was undertaken, which led to construction of a theoretical framework.

Chapter Six highlights the research approach, research design, target population and data collection procedure for the study in the case study country (Nigeria).

Chapter Seven presents the data analysis of the results of empirical survey carried out in Nigeria. The analysis was carried out in form of descriptive analysis by explaining the effect of various independent variables on housing finance supply (as the dependent variable) in the sampled UMDBs.



Chapter Eight undertakes data analysis of the results of empirical survey carried out in Nigeria on housing finance demand. The analysis was carried out in form of descriptive analysis by explaining the effects of various independent variables on housing finance demanded (as the dependent variable).

Chapter Nine introduces the model for the assessment of housing finance supply in emerging economies with the application of housing supply data obtained in Nigeria. The assessment was undertaken by the use of Multiple Regression Analysis. The validation of the model was done and the results were highlighted.

Chapter Ten highlights the summary of the study. The conclusions of the research were drawn and the areas of further research were identified. The important policy recommendations to assist in improving housing finance supply in Nigeria and even other emerging economies were raised.

### **1.8 Summary**

The Chapter has highlighted the assignments to be undertaken while investigating factors affecting housing finance supply in Nigeria. The essence of investigating these factors is to aid the government, in form of policy recommendations, to introduce various macroeconomic tools that would be investment friendly and encourage the banks to lend towards property acquisition. The objectives of the study and the research questions were developed in this chapter, which would aid the research to logical conclusions.

## **CHAPTER TWO**

### **HOUSING FINANCE SUPPLY IN DEVELOPED ECONOMIES**

#### **2.1 Introduction**

Housing is important as both a reflection and generator of social inequality. Social inequality is also reflected in the tenure of housing. Individuals are assessed based on their ownership and occupancy of different types of housing. Since tenure, described by Malpass and Murie 1999; Balchin and Rhoden 2002; Ronald 2007 as the legal status of and the rights associated with housing ownership, it is being taken as the status symbol of individuals or corporate investors in the housing market. Furthermore, housing market behaviour and housing finance is remarkably similar from place to place. Institutions and constraints, particularly the ratio of total income available for housing and other goods and services vary from one sovereign nation to the other but these differences do not obscure regularities in behaviour.

In this Chapter, discussion is focussed on housing and housing finance in developed economies to contextualise housing finance in emerging economies. Therefore, the chapter is divided into six sections. The first section is the introduction, the second section examines the tenure patterns and mechanism for the establishment of an efficient market in developed economies and the third section discusses the theoretical finance concept. Housing Finance in the Developed Economies is the focus of section four and Factors affecting housing finance in the developed economies is discussed in section five. The final section is the summary.

## **2.2 Tenure Patterns and mechanism for the establishment of an efficient housing market in Developed Economies**

The consideration given to shelter in the hierarchy of needs appear to have made housing problem so unique in the lives of individuals and even governments. While emphasis is laid on quality in some societies, the quantity available to the populace is more important in some other societies (Malpass and Murie 1999). The importance attached to housing problems by different governments have resulted in the housing policy adopted which can either be institutional / comprehensive or residual / social in nature. Donnison and Ungerson (1982) and Ronald (2007) describe institutional / comprehensive housing policy as a situation where provision of housing becomes the responsibility of governments and the residual / social housing policy is when governments supports those that can not compete in the housing market to acquire one.

However, Fallis (1994) noted that housing problem might be focussed on causes, for example, the housing problem might be described as being caused by “an underdeveloped mortgage market” because it causes the disappearance of modest rental housing. Another approach is to focus on outcomes. This type of definition of a housing problem, establishes a norm for acceptable housing. Kemeny (1984, 1988, 1992), Jacobs 1999, Jacobs and Manzi (2000) argued that what is considered a problem is contingent on how interest groups compete against one another to gain acceptance of a particular definition while rejecting others.

There were various reasons deduced as causes of housing problems. The most important reason has been the variation between the price of habitable and decent accommodation and percentage of individuals that can afford it, either as a tenant or as a mortgagee (Great Britain 1977b: 7). In the long term, market forces and government intervention

determines the specific size of each of the housing tenures while the socio-political system that is in operation provides the arena, in the shorter term, in which the relationships between the market and policy develops (Malpass and Murie 1999; Balchin and Rhoden 2002). These interactions resulted in the amount, quality and location of housing, which consumers can obtain, depends upon their ability to pay. Then, the issue of price and affordability is central to housing problem.

The perceptions of housing problems vary according to the standpoint of the beholder. Different interests and perceptions generate different analyses and policy proposals. Thus on the right-wing, it is argued that state intervention is the cause of housing problems rather than the solution to them, which has been dominant in Britain and the United States. Rent control in the private sector has long been blamed for the decline of this provision (Malpass and Murie 1999; Mullins and Murrie 2006). However, the left-wing view that housing problems of homelessness, overcrowding, disrepair and so on, originates from the fundamental inability of the market mechanism to deliver satisfactory accommodation in sufficient amounts to satisfy basic needs, especially amongst the poorer sections of the society.

In the discussion of economics of tenure choice, each country has its unique approach. The typical US approach focuses on the joint determination of tenure choice and housing demand (Fisher and Jaffe 2003). In Europe, the emphasis has been on supply consideration since housing is held in short supply and it is consistent with the policy of housing provisions for its citizenry by the governments (Galster 1997; Yates and Whitehead 1998; Whitehead 2002; Fisher and Jaffe 2003). However, most of the tenure choice literature examines the micro – level behaviour until lately when comparative studies are being introduced. Variation in homeownership rates across markets are likely

to be functions of variation in demand, supply and possibly availability of input's to the housing sector, for example land (Fisher and Jaffe 2003).

The individual decision to rent or own is a function of the relative cost of owning versus renting, household demand for housing services, household wealth and other credit constraints and even investment demand (Fisher and Jaffe 2003). Traditionally, proxies for household wealth like investment, income, age and education are used to predict access to homeownership (Haurin 1991; Goodman 1988). In the recent past, the literature has started addressing inter-temporal decision-making with respect to mobility and tenure choice (Zorn 1988; Kan 2000) and portfolio decisions (Haurin 1991). Other studies include differences in the propensity to own across regions in the US (Coulson 2002), Chen and Wu (1997) for Taiwan, Bourassa (1995 & 2006) for Australia, Zorn (1988) for Korea, Maki (1993) for Japan and Arimah (1997) for Nigeria. In the next two sub-sections, the relevance of property rights to forms of ownership and ownership structures in the developed economies are to be explored.

### **2.2.1 Structure of Property Rights and Forms of Ownership**

When a property rights is weakly defined, there is uncertainty about who holds these rights. With this anomaly, there will be positive transaction costs and the cost of transacting lower the maximisation of potential output (Barzel and Kochin 1992 p.92; Jaffe and Louziotis Jr. 1996). In real world situation, there will always be positive transaction costs because it is mostly impossible to have perfectly delineated property rights (Barzel 1989). Hitherto, Rao (2003 p.115) highlighted the characteristics of property rights to include exclusivity, transferability, divisibility, duration and well-developed boundaries of rights and enforceability. On the other hand, Landes and Posner (1987 p.29) defines property rights as an exclusive right to use, control and enjoyment of

a resource which does not entail further potential benefits of the transfer of property right to others.

The property right structure adopted by a society determines how much the owner's decision actually affects the use of something, which eventually determines the strength of the rights (Alchian and Demsetz 1973 p.17; Jaffe and Louziotis Jr 1996 p.141). It means that the greater the ability one has to affect the output of another's asset, the less value that asset will have. The form of ownership that allows the most protection, that is, reduces the amount of uncertainty of outside effects, will produce the highest value for a given asset (Barzel 1989 p.5; Jaffe and Louziotis Jr 1996 p.141).

When property rights are not clearly delineated, purchases of insurance in form of additional resources are expended to increase the certainty of having a valid and defensible claim on the asset. When property rights structure is designed in such a way that the bundle of rights is so weak, that market clearing prices cannot be achieved and the resource owners are prevented from maximising their wealth and those owners will start pursuing other goals (Alchian and Demsetz 1973 p.20; Jaffe and Louziotis Jr 1996 p.142).

Alchian and Demsetz (1973 p.23); Jaffe and Louziotis (1996 p. 145) further argued that in societies without strong property rights, the state regulates behaviour or indirectly influences it by indoctrination in order to solve the problem. Commenting on traditional system of landholding, Lewis (1955) and Abdulai & Ndekugri (2008) noted that extended family system has its advantages in societies living at a subsistence level, it might not be appropriate for societies embarking on economic growth. Hayek (1939 p. 33) is of the opinion that dictatorship is the most effective instrument of coercion and enforcement of ideals, in an effort to make central planning possible on a large scale, planning leads to

dictatorship. In dictatorships, transaction costs are increased to make enforcement possible by putting more resources into action and thereby the maximum level of efficiency is reduced. Conclusively, without strong property rights and sufficient enforcement, the risk associated with an asset like housing / real estate increases. This translates to the fact that strong property rights result in lower risk which allow for increase efficiency.

### **2.2.2. Ownership Structure in the Developed Economies**

In most of the industrialised developed economies, the owner-occupation has been the tenure of choice for the stable middle-income and middle-aged households (Kemeny 1995; Scalon and Whitehead 2004; Ronald 2007). The only exception is Germany where renting was still the majority tenure. In Germany and the Scandinavian countries, despite being subsets of the wealthiest nations in the world, they are having declining rates of homeownership over time (Fisher and Jaffe 2003; Kemeny 1981). This fact buttresses the argument of Boleat (1988) that home-ownership levels cannot be taken as a symbol of prosperity.

In the 2004 study by Scalon and Whitehead, the tenure patterns were grouped into three distinct country-groupings by size of owner-occupied sector.

- Low Owner-Occupation: Germany, Czech Republic, the Netherlands, Denmark, Sweden, France and Austria had levels of owner-occupation below 60 percent. They are all, except Germany with social housing of 6 percent, characterised by large social rented sectors, with the Netherlands having 35 percent of households occupying social housing (Ball 2004; Englund et al 2005). Germany has the lowest level of home-ownership in the EU with 40 percent of households owned their homes (Stephens 2003).

- **Mid-Level Owner-Occupation:** Finland, the USA, Australia, the UK, Canada and Belgium had levels of owner-occupation between 60 percent and 75 percent (Scalon and Whitehead 2004; Ronald 2007). Oxley (1989); Fisher and Jaffe (2003) suggests that homeownership rates in England-speaking countries have both increased and converges towards one another over time. In the US, household living in social housing is less than 10 percent and around 20 percent in Finland and UK (Ball 2004; Englund et al 2005).
- **High Owner-Occupation:** Most countries in this category are former Eastern block countries where the post communist economies adopted policies of mass transfer of state housing to the private sector (Allen et al 2004; Ronald 2007). These countries has over 70 percent level of owner-occupation rate but cannot be classified as a single Western homeownership model. This is due to the range of housing systems and structures, cultures and ideologies among the owner-occupation in these orientated societies (Ronald 2007) and are broadly classified into two:
  - (a) **The Southern European Countries:** They are made up of countries like Portugal, Spain, Italy and Greece. They are having the highest level of homeownership at 67-85 percent. These countries have often been neglected in the discuss of modern homeownership systems, and have been lumped as less developed or more traditional group with particular patterns of dwelling which strongly rely on family and intergenerational co-existence (Allen et al 2004; Ronald 2007)
  - (b) **East European Model of Housing:** These are emerging countries with high levels of homeownership in Eastern Europe. They are mainly former



socialist and soviet block countries that fit what has been called an East European Model of Housing (Stephens 2003; Tosics and Hegedus 1998).

In the less urbanised countries of Hungary, Slovenia, Croatia, Bulgaria and Romania, owner-occupied housing constitutes between 84 and 90 percent of all dwellings.

The pattern of owner-occupied dwellings established in the developed English-speaking or Anglo-Saxon societies has been central to Western conceptions of “homeowner societies”. As argued by Ronald (2007), Australia and the United States had a more aggressive and consistent state for housing privatisation. The 1928 Commonwealth Housing Act established a policy framework for a transfer to mass owner occupation in Australia. Homeownership gradually started in 1947 growing from less than 50 percent to around 70 percent by 1961 (Ronald 2007) and remained at 70 percent by 2000 (Bourassa and Yin 2006). In the United States, the National Housing Act, the Federal National Mortgage Association and the Federal Home Loan Bank were all established between 1932 and the end of the 2<sup>nd</sup> World war. Since then, homeownership rates increased from almost 20 percent to 62 percent and 64 percent in 1989 (Quercia and Stegman 1989) and 66 percent in 2000 (Bourassa and Yin 2006).

A unique difference is that while the United States allows mortgage interest and property taxes to be deducted from income for tax purposes, Australia provides cash subsidies for down payments and mortgage payments (Bourassa and Yin 2006). In the United Kingdom, at the same post-war period, a mass public-rented housing system was implemented and the sector accounted for almost 33 percent of all housing by 1981. With the various government policies which include the transformation of public and private

renters into homeowners, owner-occupation rates increased from 56 percent in 1981 to around 69 percent in 2004 (Stephens 2003; Bourassa and Yin 2006).

Except for Germany and Japan, the valuation systems adopted is based on the current market value of the property and foreclosure laws, which allow for quick re-possession (in contrast to France, Italy and Japan), has improved access to housing finance in aforementioned countries. In Germany, the “mortgage lending value” approach to valuation is adopted. This valuation approach establishes the long-term value of a property which is lower than the market value. In Japan, construction costs are used as basis of valuation which has a depressing effect on loan sizes. While foreclosure takes up to 3 years in Japan, in France, it takes 5years and in Italy up to 7years.

It is established that owner-occupation enjoy benefits of untaxed imputed rental income and capital gains (Stephens 2003). Before the credit crunch of 2007-2008, the significance of housing wealth was enhanced since the liberalisation makes it more liquid coupled with equity release instruments to boost consumption. It could be explained that the benefits has justified the efforts devoted in the US to increasing access to mortgage credit for groups in some ethnic groups through education and counselling programme (Housing America Update 2000; Stephens 2003).

As argued by Ronald (2007), there are series of connections that can be made between homeownership and citizenship, social class formation and welfare rights in Anglo-Saxon homeowner societies that are also important aspects of a western model. Winter (1994) argues that where owner-occupation rates are high, there is similarity between the meanings attached to the privately owned home, and there is strong evidence that values of economic prudence, security, status, permanence and adulthood have become embedded in owner-occupied tenure and normalised in Anglo-Saxon societies (Forrest et

al 1990; Gurney 1999; Richards 1990; Winter 1994). Again the assertion that homeownership is “natural” and associated with better type of individuals and a superior type of citizenship has also been normalised (Gurney 1999; Murrie 1998). With all these benefits, studies of housing tenure choice in Australia and the United States (Bourassa and Yin 2006), the United States (Haurin, Hendershott and Watcher 1997) and (Chiuri and Jappelli 2003) have identified the role of borrowing constraints. It is important for home buyers to have sufficient wealth and income to gain access to mortgage loans (Bourassa 1996). This household wealth must be sufficient to cover the required deposit while the remaining wealth and income must be adequate for payments of mortgage.

### **2.3 The Theoretical Concept of Finance**

The literature on finance reveals that there are only two broad types of finance available: debt and equity finance. Financing of a project either by debt or equity depends on the characteristics of assets being financed and transaction cost reasoning suggests the use of debt to finance re-deployable assets and equity used to finance non re-deployable assets (Williamson 1988). Furthermore, Jensen and Meckling (1976) in the study of theory of firms argue that debts are utilised if the ability to exploit potentially profitable investment opportunities is limited by the resources of the owner. Debt finance yields a fixed return to its suppliers in states when the firm is not bankrupt (that is, the firm has sufficient funds to make the fixed payment) (Edwards and Fischer 1994). Bank lending as a form of debt can be categorised into two: either as asset specific or corporate loans (Crosby et al 2000). Again, the debt can be either secured or unsecured.

However, equity finance gives its suppliers the right to the firm’s residual returns after payments to the suppliers of debt finance, and in addition, the right to vote on decisions concerning the firm’s operation in states when a firm is not bankrupt. When the firm goes bankrupt, limited liability provisions mean that suppliers of equity receive nothing. In

such state, they even lose the right to make decisions about the firm's operations in such states. In situation of non-bankruptcy, suppliers of equity finance have the right to the firm's residual return, they do not have the right to receive a fixed payment in every period which may be yearly or half-yearly (Edwards and Fischer 1994; Toby 2006). On the other hand, Cranston (2002) and Tirole (2006) classify debt finance into short-term and long-term. Short-term debt finance instruments include bank overdraft, commercial papers and short-term trade credit and long-term debt finance instruments include housing loans, mortgages and other forms of informal credit transactions. In the context of the developing world, debt finance can be obtained from formal financial institutions like banks, micro-finance arrangements, indigenous moneylenders, family members, employers and government (Nubi 2005). Heffernan (2003) and Tirole (2006) argued that financial instruments vary widely according to the characteristic of term to maturity. Sight deposits at banks have zero term to maturity, as they can be withdrawn on demand. Consequently, equity has no redemption date and therefore possesses an infinite term to maturity.

One of the biggest problems faced by the banking sector is lack of information about the promoters and the projects to be financed with the bank facilities (Guzman 2000; Djankov et al 2007), to determine whether the borrowers will be able to pay the principal and interest when they fall due. Altman and Saunders (1998) highlighted the array of information on various borrowers' details to include their character (reputation), capital (leverage), capacity (volatility of earnings) and collateral. However, Mints (2006) limited the borrowers required information to "the three C's of lending" which are collateral factor, capacity factor and credit factor, which are all relevant to lending in both developed and emerging economies.

## **2.4 Housing Finance in Developed Economies**

Housing Finance is a major factor determining the quality and tenure of housing consumption, the overall financial portfolio of the public and the stability and effectiveness of the financial system (Diamond and Lea 1992a). Struyk and Turner (1986) and Stephens (2000 & 2002) argued that housing finance plays an important role in shaping each country's wider housing system and the housing system takes important social and economic consequences. Then, it follows that the development of a viable housing finance system is of utmost importance in the developed economies.

By the end of 2001, the total volume of outstanding mortgage loans in the European Union (EU) exceeded 3.9 trillion euro, which translates to around 40% of total bank lending in Europe and 40% of GDP in the EU (Manning 2002; Akinwunmi et al 2007). The US Mortgage Intermediation System (USMIS) is one of the largest and most sophisticated financial system in the world with US\$8.8 trillion mortgage debt outstanding at the third quarter of 2005, which translates to about 70 percent of the nominal GDP (Cho 2007). By the end of 2003, the three Government-Sponsored Enterprises (GSEs) namely: Federal National Mortgage Association (Fannie Mae), Federal Home Loan Mortgage Corporation (Freddie Mae) and the Federal Home Loan Bank (FHLB) System hold/insure more than \$3.6 trillion in primarily mortgage-related assets (Green and Wachter 2005). However, Lucas and McDonald (2006) noted that Fannie Mae and Freddie Mac assume a significant amount of interest and prepayment risk and all of the credit risk for about half of the \$8 trillion U.S. residential mortgage market.

#### **2.4.1 The Supply and Demand Sides of Housing Finance in Developed Economies**

In microeconomic terms, the housing finance market is considered as the interaction between a supply matrix of housing finance quantity classified by characteristics such as pricing / volume and a demand matrix of households classified by their characteristics, preferences and constraints (Follain et al 1980). The market allocates housing finance on the basis of the price (interest rate) and the number of households that are willing to pay the bid prices in consideration that they have their preferences and constraints. It is argued that there is disequilibrium in the housing finance market when the price does not adjust fast enough to clear the market.

##### **2.4.1.1 The Supply of Loanable Funds / Housing Finance**

The Loanable funds theory of interest rate argued that economic agents have a certain amount of financial wealth and they can decide to hold the wealth in the form of either interest earning financial assets, or in cash which earns no interest, or a combination of the two (Pilbean 2005; Buckle & Thompson 2005 and Wickens 2008).

The quantity of loanable funds available is the stock of interest earning financial assets and is determined by three factors:

1. The amount of savings – an individual's endowment may consist of securities plus human health and the present value of his earnings. If the individual's preferred inter-temporal consumption differs from his time-profile of earning, his consumption might be re-arranged. This is done by purchases of financial securities or early mortgage repayment (Benston and Smith Jr 1976)
2. Switches from money holdings into saving products – There might be switches by individuals and business from holding financial wealth in the form of money to saving products.

3. An increase in loans made by financial institution.

When interest rises, all other things being equal, it would lead to an increase in all these three factors resulting in an upward-sloping supply of loanable funds.

#### **2.4.1.2 The Demand for Loanable Funds / Housing Finance**

The demand for loanable funds is a representation of demand for an increased stock of debt, to finance present aggregate demand for consumption, investment or government expenditure on goods and services (Pilbean 2005; Wickens 2008). The demand for loanable funds is determined by the following factors:

1. Investment demand – Long term investment for capital projects like schools and housing are usually financed by borrowing. When the need arises, these are usually considered as investment demand which results in demand for loanable funds.
2. Again, when the income of individuals are increased, they are prepared to consider increased borrowing in that they can afford extra borrowings (Girouard et al 2007; Gyntelberg et al 2007).

When there is a rise in the interest rate, all things being equal, this leads to a fall in demand for loanable funds, giving a downward-sloping demand curve of the loanable funds as shown in Figure 2.1

However, Megbolugbe et al (1991) gave the general form of the housing demand equation which is the same with the quantity of housing finance demanded as

$$Q = q(Y, P_h, P_o, T) \quad (1)$$

Where  $Q$  is housing consumption,  $Y$  is household income,  $P_h$  is the relative price of housing,  $P_o$  is a vector of prices of other goods and services and  $T$  is a vector of taste

factor. In some studies, a vector of household characteristics,  $H$  has been included in the housing demand equation (Lee 1968, Megbolugbe et al 1991). The household demographics which include age, race, marital status and household composition were included for identification of consumer preferences besides income and price factors as the main independent factor.

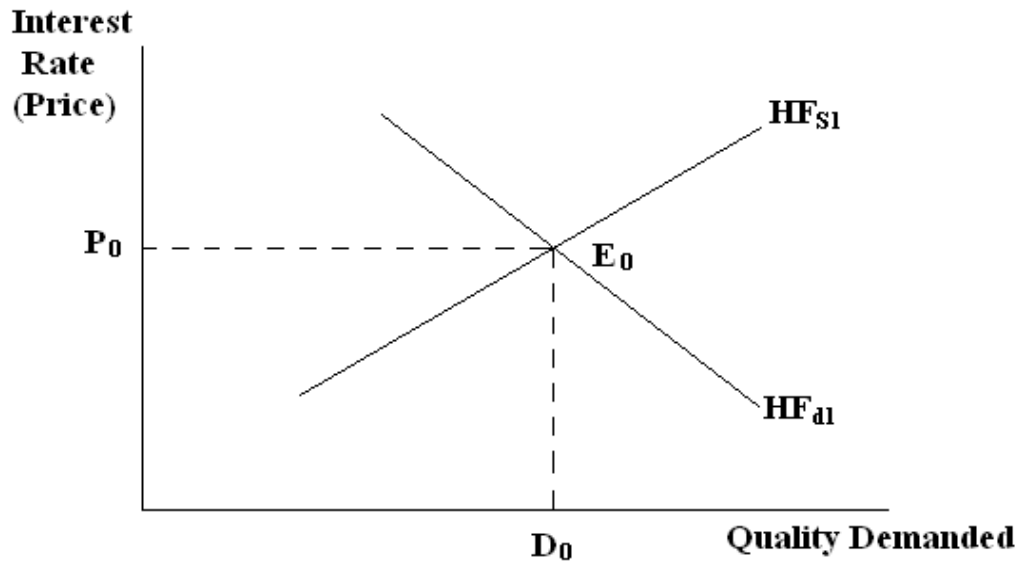
$$\text{If} \quad T = t(H) \quad (2)$$

$$\text{Then} \quad Q = q(Y, P_h, P_o, H) \quad (3)$$

For this study, data would be collected from users of housing finance at the household level. It was argued by DFID (2004 p.6) that representative data at household level is required to get an accurate picture of patterns of access and usage across the population.

Different authors have taken different positions on definition of income. While in the United States, Reid (1962), Muth 1960, Lee (1963 & 1968) and recently, Chiuri and Jappelli (2003) all applied permanent income as a variable in their housing model, Whitehead (1971) and Karley (2008) observed relevant income variable as personal disposable income. It is argued that it is out of the disposable income that lender determines the amount borrower's can afford to spend on housing.





**Figure 2.1: Housing Finance Market in Equilibrium State**

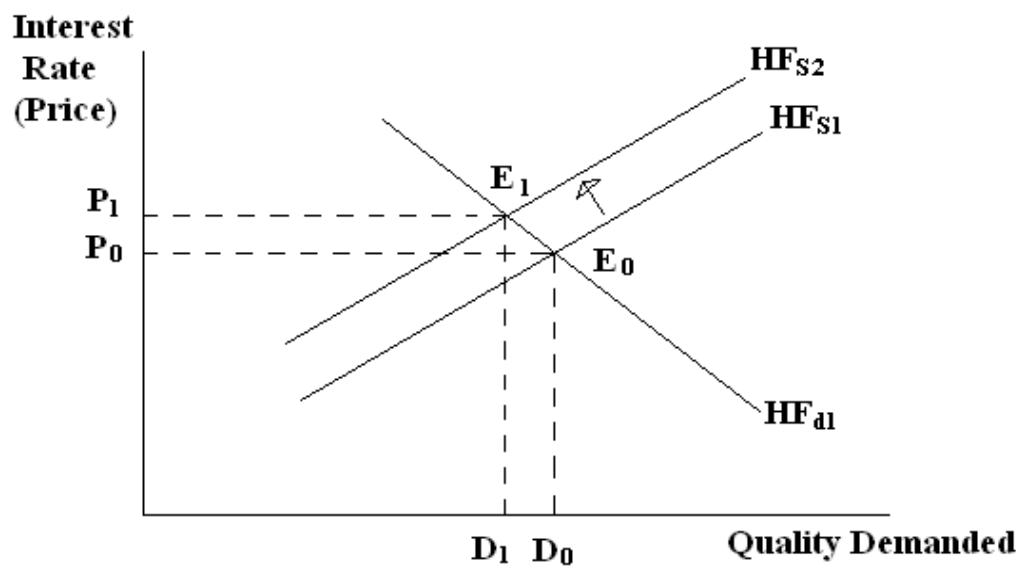
**Adapted from Pilbeam (2005 p. 79)**

The intersection of the supply and demand of loanable funds/ housing finance determines the interest rate according to the loanable funds approach to interest rate determination (Pilbeam 2005). From Figure 2.1,  $HF_{s1}$  represents the housing finance supply and  $HF_{d1}$  represents the housing finance demand. The point at which  $HF_{s1}$  and  $HF_{d1}$  crosses one another is the equilibrium point  $E_0$ . It is the point at which the quantity demanded equals quantity supplied.

For an increase in the supply of loanable funds/ housing finance, which might results in outward shift of the supply curve. These include:

- the level of savings in the economy, as incomes rise, so also is savings and the supply of loanable funds; and
- an increase in the proportion of savings held in the form of interest-earning assets compared to non-interest earning assets, however better financial intermediation makes it convenient for economic agents to hold funds in interest- bearing assets (Pilbeam 2005).

Monetary policy is one of the principal means (the other being fiscal policy) by which governments in a market economy regularly influence the direction of overall economic activities (Pilbeam 2005 and Nwaoba 2006). Depending on the instrument being used by the central government as part of its macroeconomic policies, the government policy might affect the supply of housing finance in an effort to increase the economy's overall efficiency. The effort might be about cutting down government-induced inefficiencies, caused initially by the pressure from different interest groups.



;

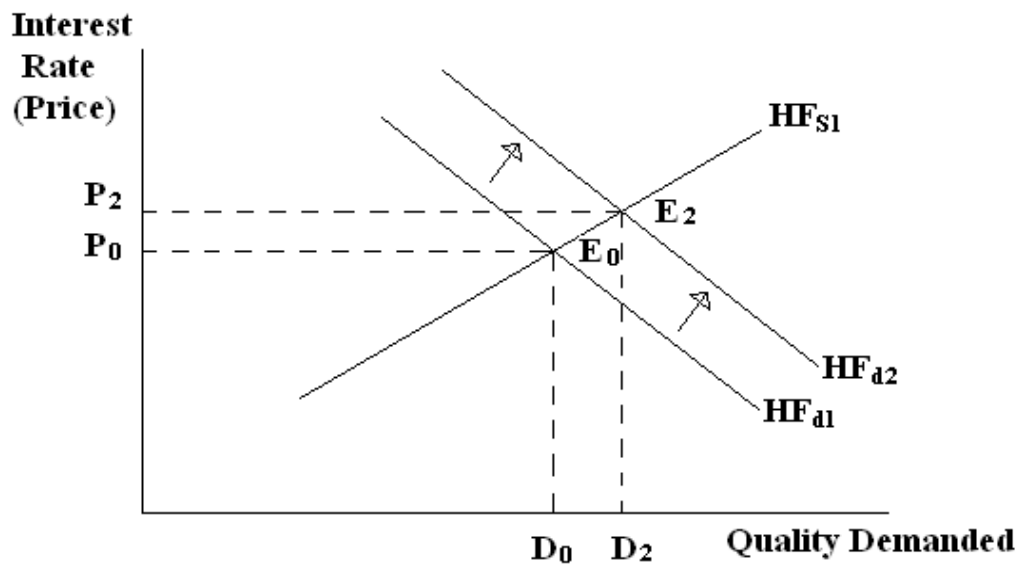
**Figure 2.2: Housing Finance Market with a shift in the supply matrix.**

**Adapted from Pilbeam (2005 p. 80)**

When the  $HF_{s1}$  matrix shifts to  $HF_{s2}$  with the demand matrix still at  $HF_{d1}$ , the new equilibrium point is  $E_1$ . At point  $E_1$ , the price of obtaining housing finance, which is the interest rate, moves to  $P_1$  and the quantity demanded moves to  $d_1$ . It means that when government adopts an instrument of macroeconomic policies that affects the supply side of housing finance and the supply matrix shifts to the left, the price (interest rate) increases and the quantity demanded reduces. This indirectly affects the affordability of

households to obtain housing finance in that their income is fixed, that is a constraint and they have to re-order their spending patterns.

Alternatively, if the government adopt an instrument of micro-economic policy that affects the spending decisions by economic agents or decision-makers in an economy (households, firms and government agents), the demand matrix of housing finance is affected. The two traditional demand management instruments are the fiscal and monetary policies. However, for this study, emphasis is to be on monetary policies in that it has become more potent as banking systems is becoming more deregulated and globally linked. The tools mostly used to affect monetary conditions are functions of either the monetary policy target or the state of financial system development (Archer 2006). In most of the developed economies, where they operate within sophisticated financial environment, the monetary authorities tend to use indirect and market-friendly methods.



**Figure 2.3: Housing Finance Market with a shift in the Demand Matrix**  
**Adapted from Pilbeam (2005 p.80)**

There are several factors that can lead to an increase in demand for loanable funds/housing finance and a resultant shift of the demand schedule to the right, which includes:

- an increase in expected future income means that economic agents will be more confident about taking more debt today (Girouard et al 2007; Gyntelberg et al 2007); and
- the prospect of future interest rate rises will encourage economic agents to borrow more now at today's lower rate of interest.

If the policy introduced by the government led to increase in disposable income and the demand matrix shift to the right represented by HFd2 with the supply matrix still at HF<sub>s</sub>1. The quantity demanded moves to d<sub>2</sub> at price (interest rate) of P<sub>2</sub>. In the long run, the inflationary pressure on demand for housing finance generated by the increase in the disposable income would lead into some households to recede demanding for housing finance and the price movement comes back to P<sub>0</sub>.

#### **2.4.2 Debt Finance for Housing**

As discussed in **Section 2.3**, debt finance can be classified into short-term and long-term. Debt finance from microfinance organisations and indigenous moneylenders are usually short-termed with high interest rate and are less appealing for housing construction (Moss 2003 and Nubi 2005). They are not commonly used in developed economies because alternative funding methods are available.

The most popular funding instrument for housing is the term loan. Here, a specified maturity date sets the time for repayment of the loan amount and interest. However, van Order (2007) identifies models for funding loans to be either portfolio lender model or securitization model. While portfolio lender model involves financial intermediaries

originating and holding loans which are funded with debt / deposits, the securitization model involves raising funds through the bond markets. Term loans vary from short term (bridging finance, working capital, trade finance) through the medium term (two to five years for working capital) to long term (project finance, capital expenditure)-which might have tenure of between 10 and 30 years (Cranston 2002; Heffernan 2003). Lending for commercial purposes are short-tenured while the typical tenure of mortgage loans vary between 10 years and in some Southern European countries to as long as 30 years in Denmark (Manning 2002).

The American mortgage markets were historically dominated by depository institutions (mainly savings and loan association or, more broadly, thrift institutions), which were induced, by both regulation and tax incentive, to hold most (80%) of their assets in mortgages (Van Order 2002). However, with the downfall of the Savings and Loans in 1980, the paradigm shifted from deposit-based to bond-based (Pollock 2005). In the European Union, the dominant funding mechanism is the deposits which consumers place with banks as savings or in current accounts. As at the end of 2006, the European Mortgage Federation estimated the funding mode of residential mortgage outstanding in the European Union as reflected in Table 2.1 below:

**Table 2.1: Sources of Mortgage Funding in the EU**  
**Source: European Mortgage Federation (Feb. 2007)**

Sources of Funding	Percentage
Retail Deposits	66%
Mortgage/Covered Bonds	15-20%
Mortgage-Backed Securities	5%
Others	9-15%

Despite the economic integration of members of the European Union, there are differences in their sources of mortgage funding, mortgage products and in the role of

government (Stephens 2000; Lea 2001). The housing finance systems of Germany and Denmark are characterised by specialised mortgage banks with mortgage bonds backed by a collateral pool as the principal source of funding where government has stringent control of the system. The United Kingdom has a depository-type of housing finance system with commercial banks and savings banks acting as the mortgage lenders (Tiwari and Moriizumi, 2003).

### **2.4.3 Equity Finance for Housing**

As apply to housing, equity finance may be construed to consist of all monies pulled together from actors – friends, relatives or business entities, who are interested in maintaining interest in the house purchased with the money raised. The most common equity-financed model for housing is the Real Estate Investment Trust (REIT). The REIT structure was designed to provide a similar structure for investment in real estate as mutual funds provide for investment in stocks. This type of investment pay little or no federal income tax in US and distribute at least 90% of its taxable income annually in form of dividends to its shareholders (Ghosh et al 2002; Campbell et al 2008). The difference between the operating cash flow and taxable or net income is due to the deduction of depreciation, which are usually high in REIT transactions (ibid). When funds from operations are to be calculated, depreciation is added back to taxable or net income. Except for accounting procedures, operating cash flow and funds from operations are supposed to be the same figure.

The concept of REITs began in the United States in the 1960s but became popular in early 1990s (Seiler & Seiler 2009). REITs started in Australia as Listed Property Trusts (LPTs) since 1970 and represented about 40 percent of investable commercial property in Australia in 2002 and accounted for 8 percent of all stocks listed on the Stock Exchange (Jones Lang 2002). These equivalent tax transparent structures came into existence in

Europe – Netherlands (FBIs) in the 1970s and France (SIICs) in 2003. In January 2007, REITs were introduced in the United Kingdom with Germany and Italy (SIIQs) introducing the structure (REITs) in 2007 (Jones 2007).

The growth and development of residential REITs in the United States was due to the collapse of their housing market in the early 1990s, which resulted in falling prices of properties between 1992 and 1994 (JCHS-HU 2003). Also, Jones (2008) notes that the long standing investment by large companies and public subsidy targeted at the private sector providing affordable housing played its part in the development of US REITs. By the end of 2007, REITs were introduced in thirty-one countries securitised real estate's global market capitalisation as measured by the GPR General Global Index grew from \$28billion in 1984 to \$234billion in 1995 and to \$1.14trillion in 2007 (Serrano and Hoesli 2009). These residential REITs could be either Equity or Mortgage. While equity residential REITs invest directly in housing, mortgage residential REITs owns parcels of mortgages.

Another type of equity finance model is the Shared Equity Products, which covers a range of financial products that enable the division of the value of the dwelling between two or more legal entities. These products thus enable the main purchaser (often called primary owner) to reduce their outgoings by giving up rights to that part of the equity in their homes. Caplin et al (1997), Berry et al (2006), Whitehead and Yates (2007) noted that these shared equity products may be taken out by first time buyers to reduce the costs of entering the housing market, by more mature owners who wish to diversify their housing equity risks especially older households who are looking to release equity.

The financial products provide the means of varying the primary owner's outgoings in line with their financial situation; of switching between the risks of debt (e.g. from interest rate rises) and equity financing (i.e. from variations in house prices); and of

transferring some the risks of house price volatility away from the primary owner. Its disadvantage includes the products being inherently more complicated and traditional mortgage and leasehold approaches, so that transaction costs are higher and there are many opportunities of post contractual opportunism on the part of both parties (Whitehead and Yates 2007)

## **2.5 Factors Affecting Housing Finance in Developed Economies**

On the supply side of the housing finance market in the developed economies, the lenders structures remain national in nature, common developments include a reduction of credit restrictions. Developments include increased loan-to-value (LTV) ratio, which is defined as the ratio of bank lending to property value, a wider array of loan contracts offered to borrowers and a move towards greater reliance on capital market funding via securitisation of housing loans (CGFS 2006). It is important to note that most housing finance markets that have historically relied more on fixed rate products have experienced an increased demand for, and use of adjustable rate mortgages as well as loan types combining features from both fixed and adjustable rate mortgages.



**Table 2.2 Housing Finance products in Developed Economies****Source: CGFS (2006 p.11)**

Housing Finance Products	Attributes
(1) Fixed Rate Mortgages (FRMs)	The borrowers repay the principal over the life of the loan and total payments are fixed over the life of the loan. It creates interest rate risk for the lender.
(2) Adjustable or Variable Rate Mortgages (ARMs)	The payment fluctuates with interest rate and interest payments are often adjusted once or twice a year. The borrower typically repays the principal over the life of the loan. Its instruments tend to convert interest rate risk into credit risk.
(3) A hybrid ARM	The product is a more sophisticated adjustable rate mortgage such as a loan initially with a fixed rate and subsequently with a variable rate, possibly with a shorter period for the initial fixed rate.
(4) Interest-only loan	Initially, the mortgage payment does not include any repayment of principal. At the end of the initial non-amortising period, the payment is raised to the fully amortising level.
(5) Option Adjustable Rate Mortgages (Option ARM) or Flexible ARM	It is a loan on which the interest adjusts monthly and the payment adjusts annually. The borrower is offered options on how large a payment to make. These typically include a minimum payment that may be less than the interest-only payment, which results in a growing loan balance.
(6) Accordion ARM	It is an adjustable rate mortgage with fixed payments but uncertain maturity or term. The borrower knows the loan payments are the same through the life of the loan, but the life of the loan is not known. The degree of flexibility in an accordion loan depends on the term of the original loan and the practical limit on the term of the loan. There is typically a limit to the life of the loan, often 40 or 50 years, which restricts the flexibility for the borrower.

Table 2.2 demonstrates some of the housing finance products introduced in the developed economies with their attributes. Caplin and Cooley (2009) defines standard fixed rate mortgage contract as an example of an incomplete contract. The contract expects the borrower to be making fixed monetary payments over the tenure of the borrowing.

However, continuous payments might not be possible in various parts of the world due to economic reasons and might to be re-negotiated. Adjustment rate mortgage is an improvement in the standard fixed rate contract because more contingency are built into the terms of the initial contract (Caplin and Cooley 2009). Adjustable rate loans are defined as loans with adjustable interest rates for the entire life of the loan or fixed for the first one to five years and then adjustable. Many markets have introduced interest-only

loans and in some cases more sophisticated loan types with built-in options and clauses that trigger changes in the payment structure.

Despite the common trends in most of the developed economies, significant differences remain across different markets regarding housing finance products used in different countries. In Belgium, loans are available with tenure of 30 years and the tenure might even be extended, if necessary. In Austria, mortgage facilities are extended in non-euro currencies, which is an advantage for investors that are looking for opportunities to hedge their investment against exchange fluctuation.

**Table 2.3: Contract features in selected mortgage systems**

**Source: European Central Bank (2003)**

Country	Usual length of contracts(years)	Estimated average LTV ratio (new loans)	Owner-occupancy rates 2002-2004	% of owner-occupiers with mortgages
Australia	25	60-70%	72 (2001)	45
Belgium	20	80-100%	71	56
Canada	25	75-95% <sup>1</sup>	66	54
France	15-20	78%	55	37.5
Germany	20-30	80-100%; 60% for Pfandbrief	42	Na
Italy	5-20	80%	80	Na
Korea	3-20	56.4%; max 70%	54 (2000)	Na
Japan	20-30	Na <sup>2</sup>	60	Na
Luxembourg	20-25	80%	70	Na
Mexico	10-15	80-100%	78	Na
Netherlands	30	87%; max 125%	54 (2004)	85
Spain	15-20	70-80%	85 (2001)	Na
Sweden	30-45	80-95%	61	Na
Switzerland	15-20	Max 80%; 65% for Pfandbrief issuance	35	Na
United Kingdom	25	70%	69	60
United States	30	Typically about 85%	68	65.1 <sup>3</sup>

(1). 75% for conventional (non-insured) mortgage loans and 95% for insured mortgage loans. (2) The Government Housing Loan Corporation discloses the average loan-to-value (LTV) ratio for the underlying mortgages of its MBSs. The ratio has been around 70-80% from the first issue in March 2001 to date. (3) 2001 Survey of Consumer Finances, Board of Governors of the Federal Reserve System.

From **Table 2.3** above, most housing finance markets have contracts with a loan-to-value (LTV) ratio of 80-100%, however this may be restricted to 60% as in Germany while in some, it can reach 125% as in the Netherlands. Based on the loan type and market, longer contracts are associated with higher LTV ratios. Jappelli and Pistafferri (2003) argued that over the last two decades, there has been a trend towards higher LTV ratios in several countries, partly reflecting changing market practice and regulatory changes, which have resulted in lower down-payments for housing loans.

In the developed economies, CGFS (2006), Gyntelberg (2007) and Girouard (2007) noted that the following major factors – Macroeconomic Developments, Advances in Information Technology with financial innovation, Broadened Mortgage Contracts, Funding Sources for lenders and Government Policies have contributed to the cost-efficient and efficiency of their housing finance supply systems. These factors are individually discussed in the next subsections.

### **2.5.1 Macroeconomic Trends in Developed Economies**

Three recent macroeconomic trends have played a fundamental role in the development of the housing finance market in both the developed and emerging economies (CGFS 2006; Gyntelberg et al 2007; Girouard et al 2007). Firstly, the level and volatility of inflation and then interest rates have declined. Second, output growth has become more stable. The available evidence suggests that this decline in nominal interest rates has stimulated both the demand for and supply of mortgage loans as a result of cheaper

credit. However, The Economist (2009) observes that in the United States, savings fell from around 10 percent of disposable income in the 1970s to 1 percent after 2005 presumably partly due to decline in nominal interest rates. In terms of lower output volatility, the lower frequency and severity of economic downturns has reduced the volatility of household income and may have contributed to an increased attractiveness of flexible rate mortgages and a willingness to assume higher debt burdens.

Mohanty et al (2006) noted that there has been a substantial holding of government securities in many countries as form of investment in this volatile financial market. The afore-mentioned government securities include treasury bills, treasury certificates and government bonds. It is assumed that holding of government securities are safe and with minimum risk though coupon rates on these types of investments are low relatively. This resulted in a drastic reduction in the borrowing of government at different levels.

Gyntelberg et al (2007) argued that if lower interest rates are perceived to be permanent, households can thus afford to borrow more, which tend to push up house prices. Also, rising disposable incomes in the household sector and faster economic growth and lower output volatility in many countries have fuelled house price increases because households can afford to pay more for their homes. Higher incomes combined with lower interest rates also meant that more households can gain access to the credit market, thereby helping to boost demand for houses and housing finance. Demographic factors may have also influenced house price development (CGFS 2006; Gyntelberg et al 2007). For example, in the United Kingdom and Denmark, there are signs that the proportion of first-time buyers, in relation to the total population, may have a positive impact on house prices. When a large number of first-time buyers enter the housing market, the demand

for houses increase leading to a rise in prices and ultimately an increase in the demand and supply of housing finance.

### **2.5.2 Advances in Information Technology and Financial Innovations**

The structure and the quality of a financial system could be driven by the level of technological developments (Levine 1997 and Levine et al 2000). This might have contributed to the enormous financial innovations in the recent past (Miller 1986; Allen and Gale 1994). Also, financial innovation is viewed as an act that drives the financial system towards the goal of greater efficiency (Allen and Gale 1988, 1994 as cited by Merton & Bodie 1995; Diamond 1984; Merton 1989 and Ross 1976 & 1989). Giving the historic account of financial innovation, Allen and Gale (1994) noted that many instruments had been developed as far back as the 1930s but only few of the instruments survived. In terms of the technological developments, they have come in the form of innovations in telecommunications, data processing and computer utilisation for effective financial analysis has resulted in reduced transaction costs for the financial services industry (Merton and Bodie 1995).

When these improvements are combined with increased competition, it has helped to reduce credit institutions' margins, which is the difference between cost of mobilising deposit and the cost of lending, thus lowering mortgage rates. Also, Boivin and Giannoni (2006) in discussing effectiveness of monetary policy notes that innovations in firms and consumer's behaviour presumed to have been caused by technological progress and financial innovations might have allowed consumers to cushion themselves from the impact of interest rate fluctuations. Technological improvements also have enabled better pricing of risk and return on the underlying collateral and these improvements have made it easier for lenders to exchange information about borrowers. As part of financial innovation, lenders have introduced various forms of financial products and households

can now choose between a wide range of mortgage contracts with different terms and conditions. Despite the fact that the variable-rate contracts stand out as the most attractive option, in some countries there is also a growing interest in loans with interest-only payments over a number of years, or even loans with an initial negative amortization plan (CGFS 2006; Gyntelberg et al 2007). When a mortgage contract involves payment of interest only, there is a greater opportunity to borrow larger amounts.

Technological improvements and financial innovation have enhanced the performance within both wholesale and retail banking. Wholesale banking involves a small number of very large customers such as large corporate organisations whereas retail banking is made up of a large number of small customers that needs personal banking and small business services. Modern investment bankers can be described as wholesalers engaged in underwriting, merger and acquisitions, consultancy and funds management. Over time, the functions evolved into one or more general underwriting and initiating or arranging financial transactions. It is of importance to note that the financial market reforms, the increasing ease with which financial instruments are traded, the use of derivatives to improve risk management and communications technology which enhances global information flows, have contributed to the integration of global financial market (Heffernan 2003).

The retail banking sector has witnessed rapid process innovation where new technology has altered the way key tasks are being performed. Retail banking is being reinvigorated through technological developments whereby private savings, insurance, finance and investment products are marketed through diversity of distribution outlets world-wide (Scholtens & van Wensveen 2003). Heffernan (2003) analyzed that Automated Teller Machine (ATM) transaction had taken over work of about 25 percent of cashiering jobs. In the United Kingdom, the number of ATM's has risen from 568 in 1975 to 15,208 in

1985 and the trend continues till now, with the same trend observed in all industrialised countries and other technological developments like automated branches, electronic cards are becoming very popular.

### **2.5.3 Broadened Mortgage Contracts**

In developed economies, many countries have embraced wider varieties of mortgage contracts. Notably, countries that historically relied predominantly on fixed rate mortgages have seen a growth in the use of variable rate type mortgages. In addition to the increased product choice, many housing finance markets have had a trend towards higher LTV ratios (Jappelli and Pistafferri 2003; CGFS 2006; Gyntelberg et al 2007), partly reflecting changing market practice and regulatory changes, resulting in lower down payments for housing loans. As shown in Table 2.3, most markets have contracts with a loan-to-value (LTV) ratio of 80-100%, although in some cases this may be restricted to 60% in Germany and can reach 125% in Netherlands.

Despite these common trends in the mortgage markets, there are still significant differences across markets when it comes to the loan or contract types typically used. Pre-payment conditions and rights (options) is another area where there are remarkable differences across markets (CGFS 2006; Gyntelberg et al 2007). For example, in the United States market, the standard fixed-rate loan includes an option or right to prepay without compensating the lender for capital or market value losses, but in Germany, the lender can ask for compensation of foregone earnings. In other European countries, it is standard to include some type of prepayment fee in the mortgage contract to reduce borrowers' incentive to prepay, although many European countries have legal limits on prepayment fees.

#### **2.5.4 Funding Sources for Lenders**

There are differences across markets with respect to funding patterns. From Table 2.1, it is shown that retail deposit is the dominant funding source in the European Union. Deposits have historically been the dominant source of funding, but capital market funding or securitisation has witnessed a tremendous growth in the last decade (CGFS 2006; Gyntelberg et al 2007). As at the first half of 2004, more than £70 billion of European mortgage-backed securities and £55.5 billion of European asset-backed securities were issued (Pais 2008).

The weakness identified in utilisation of short-term deposit liabilities to fund long-term illiquid assets like mortgages Cho (2007) was complemented by Shin (2009). In analyzing the Northern Rock situation, Shin (2009) observes that within a financial system where short-term liabilities are being used to acquire long-term illiquid assets, any disturbance in the leverage level (ratio of total assets to equity) have to show up somewhere within the financial system. When short-term liabilities are being withdrawn at any point in time, financial institutions holding long term illiquid assets face a liquidity crisis, an example of what happened to Northern Rock.

A large portion of mortgage loans are held off-balance sheet and funded through securitization in the United States. Since 1981, securitization has been used to fund 15 percent of total US residential mortgage origination, about 40 percent in 1990 and 93 percent in 1993 (Kolari et al 1998 and Pais 2008). The outstanding amount of US agency mortgage-backed securities was \$2.8 trillion and the outstanding for asset-backed securities was \$1.8 trillion by September 30, 2004 (Pais 2008). Mortgage / Covered Bonds is becoming a new source of mortgage loan funding in the United States (Lucas et al 2008; Ergungor 2008) and continue to be very popular and the second most popular



funding instrument in Europe after retail deposits. As at end of 2005, the total covered bond outstanding in Europe exceeded £1.8 trillion (\$2.35 trillion), with 60 percent of these issues originated from Germany (Lejot et al 2008). Again there are no centralised issuing institutions (Van Order 2000; Akinwunmi et al 2007).

With the present frozen situation of the mortgage-backed securities (MBS) market, as off-balance sheet transaction, financial institutions might be considering issuance of covered bonds as alternative financing method. The major distinction between covered bonds and securitization is the concept, in that covered bonds are secured loan that do not require transfer of pool of assets to a special purpose vehicle. Covered bonds offer a vehicle for a financial institution to issue debts that are secured by dedicated securities like pool of mortgages and these mortgages are part of the financial institution's balance sheet (Avesani et al 2007; Packer et al 2007; Lucas et al 2008; Klein 2008 and Shin 2009).

### **2.5.5 Government Policies**

For the importance attached to a viable housing finance system, during the 1980's, governments in the developed economies intervened in the housing finance market by setting up "special" circuits (Diamond and Lea 1992a; 1992b and 1993). "Special" circuits are housing finance institutions set up by governments with the belief that the private market was incapable of allocating sufficient funds to meet the demand for housing finance at a reasonable price. With improvement in financial technology and a political shift toward a conservative emphasis of reliance on market forces in the developed economies, the "special" circuits for housing finance were reduced in importance or totally eliminated and replaced with a more market-based allocation of credit to housing (Diamond and Lea 1992a; 1992b and CGFS 2006).

Also, housing policies have been an important factor affecting both demand and supply in the housing finance systems. In several countries, land use restrictions and planning policies might have contributed to higher house price rises for any given increase in demand. In addition, tax policy and foreclosure laws strongly affect the demand and supply of mortgages and housing, and in turn house prices. In terms of tax policies, mortgage interest and property taxes are deducted from income for tax purposes in the United States while Australia provides cash subsidies for down-payments and mortgage payments (Bourassa and Yin 2005). While foreclosure laws, which allow relatively quick repossession, are widely applied in most countries of the developed world, the execution differs from country to country. In Japan, while foreclosure takes up to 3 years, in France, it takes up to 5 years and 7 years in Italy (Stephens 2003).

## **2.6 Summary**

In this Chapter, a critical review of housing finance supply in developed economies was undertaken. The structure of property rights in any economy determines the form of ownership all over the world. With well-developed property rights in these economies, they tended to adopt owner-occupation as tenure of choice. Within their developed financial system, there are broad mortgage contract options, an array of funding sources and financial innovations coupled with effective risk management that drives the financial system towards greater efficiency.

From 2007 upwards, various authors on bank lending in the developed economies have highlighted weaknesses in the utilization of short-term deposits to fund long-term illiquid assets, which is predominant in the United Kingdom. Apart from adopting securitisation as a stable funding source and an asset-liability management tool, other credit risk

transfer processes like credit derivatives, collateralised debt obligations (CDOs) and mortgage covered bonds (MCBs) are being utilised.

One might conclude that housing finance supply in these economies had attributes of an efficient sector, taking cognisance of benefits of improved efficiencies to include reductions in the costs of credit intermediation and significant increases in the availability of funds and range of contract terms. Except with few exceptions, like in France and Germany, the direct involvement of central government in mortgage lending has been minimal which improve the informational efficiency and ultimately reduces transaction cost.

## **CHAPTER THREE**

### **HOUSING FINANCE SUPPLY IN EMERGING ECONOMIES**

#### **3.1 Introduction**

Housing and residential construction are considered to be central importance for determination of both the level of welfare in a society and the level of aggregate economic activities (Sheppard 1999; Poole 2003). Housing is the largest asset owned by most households and is nearly always financed, in the sense that owners of housing capital must pay for their units over a period of years (Malpezzi 1999).

It is therefore imperative for the emerging economies to appreciate benefits to be derived from having a well-functioning mortgage markets despite various economic issues being tackled with limited resources. The large external benefits to the national economy were highlighted in (Jaffee and Renaud 1997; Renaud 2008) to include capital market development, efficient real estate development, construction sector employment, easier labour mobility, more efficient resources allocation and lower macroeconomic volatility.

This chapter provides a critical review of the growing body of literature on housing finance in emerging economies that Renaud (2008) noted had been no comparative finance work of a relatively systemic nature on its structure and performance.

To achieve the above, the chapter is divided into seven sections. The first section is the introduction, the second section examines the definition of emerging economies and the third section discusses the housing sector in emerging economies. Housing finance supply in emerging economies is the focus of section four while section five discusses factor affecting housing finance supply in emerging economies. Issues in housing finance

supply and the deficiencies in past studies are discussed in section six and the summary in section seven.

### **3.2 Definition of Emerging Economies**

The term emerging economies does not lend itself to easy definition. The words “Emerging” and “Developing” economies are interchangeably used in economic discussions and literatures. It is a term coined in 1981 by Antoine W. van Agtmael of International Finance Corporation, a part of the World Bank. It is simply defined as an economy with low-to-middle per capita income. Such countries constitute approximate 80% of the global population, representing about 20% of the world’s economies (Obadan 2006a; Upadhyay 2007).

Developing countries have existed for a long time, and for much of their history, they have attempted two related tasks. The first is to build their local financial institutions/markets and secondly, to attract international investment. A growth in foreign investment by a country is an indication that the country has been able to build confidence in its local economy (Upadhyay 2007; Kehl 2007; Vatnick 2008). This resulted in a total net capital inflows into the emerging markets multiplied by 2.5 within the period 1996-2000 to a figure of US\$260 billion (ibid). As time went by, the word used to describe these countries and their markets have undergone considerable change. Between 1950’s and 1960’s, it was common to speak of “underdeveloped country”. From 1970’s to 1980’s, it was changed to more polite “less developed country” and from 1990 onwards, they are referred to emerging financial market (EME) (Beim and Calomiris 2001). The name is a reflection of a worldwide change of ideas, away from state-sponsored development and toward the opening of free markets bringing a bust of progress and performance (Beim and Calomiris 2001).

Bigsten and Kayizzi-Mugerwa (2001 p.10) defined an economy as “emerging” if it is in the process of sustainable per capita income growth. A set of criteria or indicators that points to the fact that the growth of an economy is sustainable includes the following:

- An emerging economy would be expected to have a fairly efficient macroeconomic framework accompanied by an appreciable level of international competitiveness.
- The economy should be a market economy with reasonably efficient and competitive domestic markets.
- The level of human resource development as well as that of the quality of infrastructure and institutions would be consistent with the needs of an economy set for rapid expansion.
- A properly functioning economy is partly the result of an adequate level of governance and political accommodation.
- An emerging economy is expected to become gradually less dependent on aid and relying more on domestic savings and foreign private inflows for investment.
- Its debt burden is supposed to claim a modest share of its total resources.

A further definition of emerging economies/markets was given in Luo (2002 p.5) as

“A country in which its national economy grows rapidly, its industry is structurally changing, its market is promising but volatile, its regulatory framework favours economic liberalisation and the adoption of a free-market system, and it’s government is reducing bureaucratic and administrative control over business activities”

Luo (2002), however also noted that it is misleading to assume that emerging markets/economies are homogenous. He identified some commonalities and distinctions

among them. The common factors identified are –legal infrastructure are made up of legal system development and enforcement, that are generally weak; factor markets and institutional support needed for economic development and business growth are weak (factor markets such as capital market, labour market, production materials market, foreign exchange market and information market are generally underdeveloped and still intervened by governmental institutions and departments); emerging markets tend to experience faster economic growth than other types of economies but this growth is often accompanied with uncertainties and volatilities; emerging markets are often featured with strong market demand, especially from emerging middle-class customers. Renaud (2008) noted two basic indicators of financial development as being the total volume of financial assets to reflect scale, and financial assets per capita to reflect financial depth which are quite small and shallow in emerging economies

In the studies of emerging capital markets, which has recently attracted the attention of global investors, Barry & Lockwood (1995), Mwenda (2000) and Kehl (2007) highlighted their characteristics to include high average returns, high volatility and excellent diversification prospects.

The distinctions amongst the different nations of the emerging economies as identified by Biem and Calomiris (2001) and Luo (2002) included being not possible to determine by size, while countries like China, India, Brazil, Russia and Mexico are large, we have other smaller emerging states. While some nations adopt fiscal and monetary policies to oversee their national economies, countries like India, China and Indonesia manages their national economies by adopting fiscal, monetary and administrative policies.

The Economist (2006) and Renaud (2008) observed that there is more than one definition of emerging economies depending on who does the defining. The Economist (2006)

noted a lot of definitional confusion, while JP Morgan Chase and the United Nations counts Hong Kong, Singapore, South Korea and Taiwan as emerging economies, Morgan Stanley Capital International included South Korea and Taiwan in its emerging-market index, but keeps Hong Kong and Singapore in its development-markets index. The confusion was further compounded when The Economist (2006 p.6) noted that International Monetary Fund (IMF) described all the four countries as “developing” in its International Financial Statistics but as “advanced economies” in its World Economic Outlook.

In various studies on emerging market economies, authors include more countries in their studies. Bekaert and Harvey (2000a & 2000b) in their studies of capital markets in emerging economies included the following nineteen countries namely: Argentina, Brazil, Chile, Colombia, Greece, India, Indonesia, Jordan, Korea, Malaysia, Mexico, Nigeria, Pakistan, Philippines, Portugal, Taiwan, Thailand, Turkey and Venezuela as emerging market economies. However, Chiuri et al (2002) while studying capital requirements in emerging market economies, a searchlight was directed to twenty-two countries, some were included in the studies by Bekaert and Harvey but some were not included. The countries considered in the Chiuri et al study included Argentina, Brazil, Hungary, Korea, Malaysia, Mexico, Nigeria, Paraguay, Thailand, Turkey, Venezuela, Chile, Costa Rica, India, Poland, Slovenia, Morocco, South Africa, Kenya, Tanzania, Sri Lanka and Israel.

For this study, an emerging economy is to be considered as a country with a growing economy as indicated by the economic indices (Gross Domestic Product, per capita income etc), with a promising market due to the purchasing power of its population, improvement in its regulatory framework which favours economic liberalisation and the



adoption of a free-market system with bureaucratic and administrative control reduced to the minimum in the course of business transactions.

### **3.3 The Housing Sector in Emerging Economies**

The regions within the emerging economies had unique characteristics in their housing sectors, which are dictated by their housing policies. Donnison & Ungerson (1982) and Ronald (2007) argued that policies adopted in each country can be institutional or comprehensive housing policies. In comprehensive housing policies, the responsibility of providing housing for the residents is considered as a productive sector of the economy while in the institutional housing policies, the intervention of governments comes in, as an effort to support residents that had problems in meeting their housing needs.

In the South Asian countries, their housing set-up is characterised by the very high population densities which results in their housing policies being comprehensive in nature. This results in government taking overall care of the resident's housing needs and taking housing as an economically productive sector (Doling 2002; Ronald 2007). However, as argued by Agus et al (2002 p. 14), the allocation of housing in East Asia society is essentially based on the ability of households to pay rather than bureaucratic principles of fairness and equity. The principles of markets and individual consumption still apply to housing despite the fact that the society is more collectivistic and less individualistic. (Ronald 2007).

The level of urbanisation in Sub-Saharan Africa (SSA) is modest by global standards, but because of this limited urban base, African cities are experiencing some of the fastest rates of urbanisation in the world (UNCHS 1996a). With urbanisation rates exceeding 5 percent per annum, twice as high as Latin America and Asia, 35.7 percent of their populations lives in urban areas as at 2003 (Auclair 2005). The rapid urbanisation comes

along with a considerable growth of informal housing and the striking feature of most African cities is the extent of informal development (Okpala 1984; Arimah and Adeagbo 2002; Groves 2004 and Egbu 2007). Omirin and Antwi (2004), UNCHS (1996b & 2000) and Durand-Lasserve (1997) are categorical in their observations that informal and illegal developments provide shelter for over 85 percent of the population.

According to UN-Habitat, the SSA is set to have an urban majority by 2030, with more people in towns and cities than the total population of Europe, which is about 492 million (Roy 2007). Analysis also reveals that not only is the income poor who are unable to access housing of reasonable quality, but that there are many other households not necessarily on low incomes who are also unable to secure decent housing (Groves 2004; Roy 2007).

In such circumstances, UNCHS-Habitat has identified the concept of “housing poverty”. The 1996 Global Report on Human Settlements (UNCHS-Habitat 1996b) defined the concept as individuals and households who lack safe, secure and healthy shelter with basic infrastructure such as piped water and adequate provision for sanitation, drainage and the removal of household waste.

Why is the housing situation so pathetic in the Emerging Economies? Could the situation assume to be caused by inadequate land supply or inability of potential homeowners to obtain funds to build decent accommodations? The next two sections will discuss housing finance supply in emerging economies and factors affecting housing finance supply in emerging economies and answer the two questions posed.

### **3.4 Housing Finance Supply in Emerging Economies**

The role of a housing finance system does not stop at the provision of shelter, it is also very important to the mobilisation of domestic savings, shelter being one of the first

priorities of households and a leading reason for savings. Therefore, the literature contends that the housing finance sector can and should play a central role in the mobilisation of resources by households (Renaud 1984; Renaud 2008).

In Asia, according to UN-Habitat's state of the World's cities 2006-7 report, 73 percent of urban dwellers live in non-permanent housing. The housing sector is severely constrained by lack of an adequate and appropriate housing finance system, in which Asian Development Bank study says that Asia's mortgage sector is the least developed in the world (UNCHS 2007). The situation in SSA is similar, characterised by the lack of housing finance.

The stock of housing finance in Namibia and South Africa comes to 18-20 percent of GDP, for other countries for which data are available had about 2 percent (Nigeria, Mali, Morocco, Senegal) (Roy 2007). In Asia, many countries mortgage financing per year is less than 2 percent of GDP compared to 88 percent in the United Kingdom (UNCHS 2007) and 15-21 percent in Chile, Malaysia and Thailand (Honohan and Beck 2007). In societies where social housing is not on the priority list of government, the affordability would have to be looked at from the point of view of the individual's own ability to raise money needed to meet the cost or price of housing needs. Generally, the first source of funding for the individual is their income because it does not involve payment of interest. But income is generally low in the developing world as shown in Table 3.1 below.

**Table 3.1: People Living on Less than US\$2 (£1) a day**

Source: World Bank (2007) p.63

Region	Millions		Percentage	
	1999	2004	1999	2004
East Asia and Pacific	883	684	49.3	36.6
Europe and Central Asia	88	46	18.6	9.8
Latin America and Caribbean	128	121	25.3	22.2
Middle East and North Africa	64	59	23.6	19.7
South Asia	1,073	1,124	80.8	77.7
Sub-Saharan Africa	491	522	75.8	72.0
Total	2,727	2,556	54.4	47.7

	Real GDP growth in %		GDP per capita in US\$		Inflation (Annual average % change)	
	2006	2007 (p)	2006	2007 (p)	2006	2007 (p)
South Africa	5.0	4.7	3,564	3,696	4.7	5.5
Nigeria	5.3	8.2	750	1,150	8.3	7.9
Ghana	6.2	6.3	316	328	10.9	9.4
Kenya	6.0	6.2	458	478	14.1	4.1
Uganda	5.4	6.2	275	282	6.6	5.8
Zambia	6.0	6.0	365	378	9.1	8.0

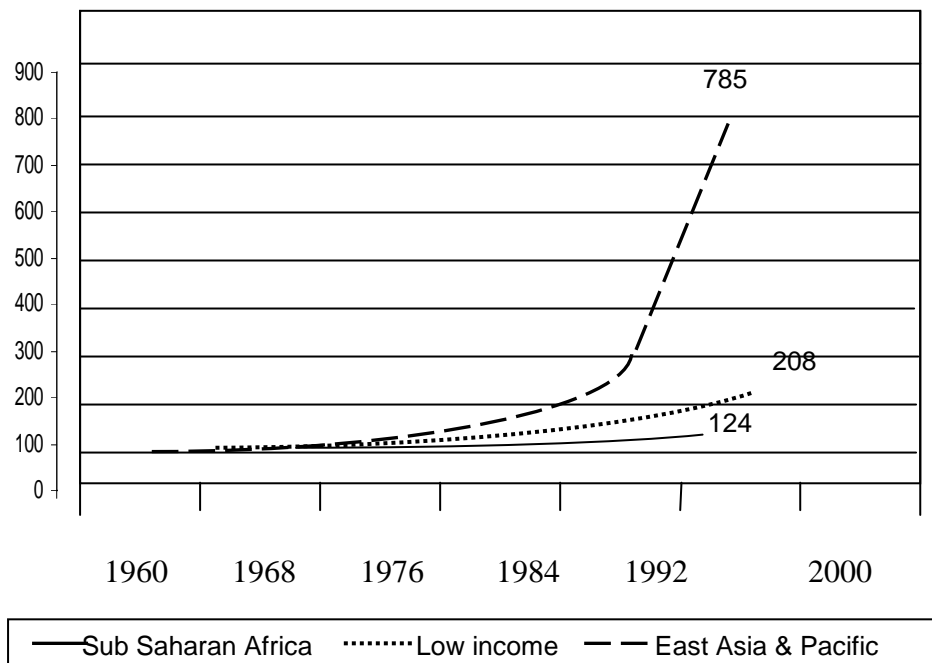
**Table 3.2: Economic indicators of countries in SSA (2006-2007)**

Adapted from Roy (2007) p. 17

p = projected

**Figure 3.1: GDP per capita in regions of emerging economies (1960-2004)**

**Adapted from Roy (2007) p.14**



Tables 3.1, 3.2 and Figure 3.1 explain the economic situations in most of the emerging market countries. From Table 3.1, it is clear that in 2004, only 50% of the total population of the developing world lived above US\$2.00. In Sub-Saharan Africa (SSA), the situation was markedly different. Just some 28% of the population lived on US\$2.00 or more a day in 2004, relative to 22.3% in South Asia, 80.3% in Middle East and North Africa, 77.8% in Latin America and Caribbean, 90.2% in Europe and Central Asia and 63.4% in East Asia and the Pacific Region.

From Table 3.2, GDP growth rate of above 5 percent were recorded in 2006 for most of the countries of SSA and a better average projected GDP growth rate for 2007. Despite these impressive figures, the SSA lags behind other regions. From Figure 3.1, in 1960, a GDP per capita income for SSA and East Asia were more or less the same, by 2003, GDP per capita income in East Asia was five time higher than that of SSA. In the late 1970's, the East Asian and Pacific region started to outpace SSA. By 2007, GDP per capita

income rose by nearly 800% in comparison to 1970. In SSA, in contrast, it has been stagnant whereas in other regions of the emerging economies, extreme poverty has been drastically reduced. The poverty level has increased from 36 percent of the population in 1970 to 75.8 percent in 1999 (Roy 2007). As a result, three out of four Africans is poor, spending less than US\$2.00 per day on basic necessities of life and the number of the poor is twice as high as it was in 1970.

Many countries in the emerging economy have nascent and weak financial markets. The participation of financial markets in financing housing has been limited and the majority of low-income households are also excluded from the formal financial services industry (UNCHS 2007). This resulted in 70 to 80 percent of housing finance in emerging economies being raised from the informal market (Okpala 1994; Buckley et al 1994; Saravanan 2007 and Tiwari & Debata 2008). These informal markets are made up of loans from relatives, employers and money lenders that supplement savings and current income for housing finance (Renaud 1985; Kim 1997).

However, formal housing finance supply in emerging economies is operated through both policy-driven and the market-oriented housing finance channels (Deng and Fei 2008).

The policy-driven housing finance is mainly through Housing Funds Schemes, which are mandatory housing savings scheme while the market-oriented housing finance is characterised by commercial loans from financial institutions. In the developed economies, commercial mortgages are referred to as collateralised lending to property developers whereas in the emerging economies, commercial loans are basically mortgages raised from financial institutions. What then are the factors affecting housing finance supply in emerging economies?

### **3.5 Factors affecting Housing Finance Supply in Emerging Economies.**

With the magnitude of housing needs in most of the countries in the emerging economy, Buckley and Kalarickal (2004), Hassler (2005) and Merrill (2006) argued that there are requirements that emerging economies must embrace, if they are going to move forward in terms of delivering housing finance. The requirements include stable macroeconomic conditions, a legal framework for property rights, mortgage market infrastructure and funding sources to promote financial intermediation and each will now be discussed.

**3.5.1 Macroeconomic conditions:** As briefly mentioned in **Section 2.4**, macroeconomic policies are impacts of exogenous interventions at the aggregate or economy-wide levels (Burda and Wyplosz 1997; Hammond 2006 and Roy 2007). Macroeconomic instability and its corollary of high and volatile domestic interest rates, erratic monetary and exchange rate policies coupled with weaknesses in the financial systems of many emerging market countries (Bhattacharya et al 1997; Irving and Manroth 2009), have a disproportionate impact on long-term mortgage finance. Various factors contribute to greater macroeconomic volatility in emerging markets, the most important is that their production structure is typically much less diversified than that of developed countries and often dependent on primary commodities.

The macroeconomic policies might be adopted to affect (decrease/increase) the nominal interest rate, or volatility of inflation, which has affected the efficiency of housing finance. In differentiating between housing affordability and housing finance affordability, Buckley et al (1994) argued that housing finance affordability arises when inflation makes housing unaffordable at the market rates of interest. This resulted in indexation as means of addressing the housing finance affordability problem especially in the Latin America and a few African countries like Ghana. Therefore, the objective of

indexation and redesigning mortgage contracts is to eliminate financial constraints that impede the affordability housing and provide a financing vehicle so that those who can afford to, and so desire, can purchase homes (Buckley et al 1993). This assertion has been argued by Buckley (1996) and Kim (1997) that indexation of deposits and mortgage products can only deal with moderate inflation.

A sound macroeconomic policy framework is one that promotes growth by keeping inflation low, the budget deficit small and the current account sustainable (Fischer 2004 p.123; Hale 2007). Therefore, the financial regulatory authorities (central banks) in most emerging market economies have used policies like the cash reserve requirement and liquidity ratio as instruments of monetary control. Cash reserve requirement is the percentage of the banks cash asset to be kept in an account with the central bank. This policy is adopted to control volume of funds available for financial institutions to invest in granting loans and advances.

### **3.5.2 Financial Development and Liberalisation**

In most of the emerging market economies, the financial subsector is generally shallow relative to the sizes of these economies. The shallowness of these institutions results in limited access to financial services, with the low-income earners and even medium – income earners mostly discriminated against in the financial market. This form of discrimination comes in the form of being denied credit facilities due to their inability to meet the stringent requirements of suppliers of finance (Roy 2007; Renaud 2008).

In terms of liberalisation, there has been a relative efficiency in the credit markets of the emerging economies due to the adoption of market discipline and risk-based capital guidelines. Almost all countries in the emerging economies are moving away from rigid



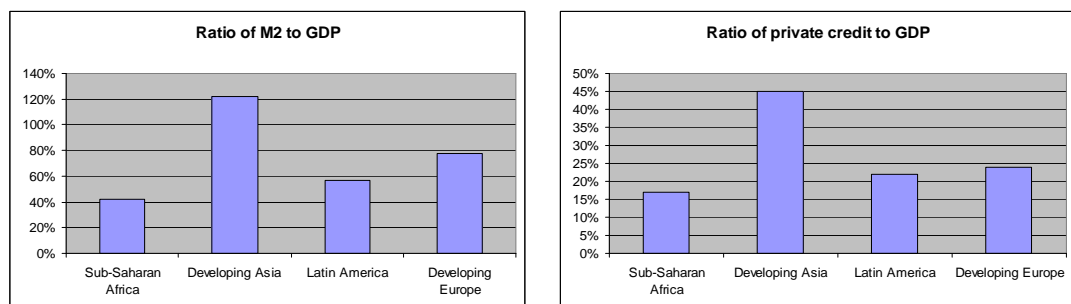
control of credit to market-determined allocation of resources and Renaud (2008) noted that:

“From the IMF’s International Financial Statistics (2000) with the demographic and economic structure of their economies from the World Bank’s Development Indicators, this database covers 183 countries and shows that many financial systems are small. Out of this number, 63 countries had an aggregate financial sector size (measured by money supply M2) of US\$ 1 billion which is not larger than a small bank in a developed economy. Even with a higher threshold of US\$10 billion that would be of the magnitude of the balance sheet of a medium-size bank in an industrial country, there were 115 countries that fell under the US\$10 billion mark. These countries accounted for a population of almost 820 million in 2000”

These financial systems include all of Sub-Saharan Africa except Nigeria and South Africa, a number of Latin American countries and some transition economies.

**Figure 3.2 Indicators of Financial depth and development for regions in emerging/transition economies (2004)**

**Source: Adapted from Roy (2007)**



The selected indicators for assessing level of financial depth and financial intermediation includes- total assets of financial intermediaries; bank credit to the private sector as a share of GDP and ratio of broad money  $M_2$  to GDP (McDonald & Schumacher 2007; Irving & Manroth 2009). However, Pill & Pradhan (1995); Irving & Manroth (2009) evidenced that interest rate produces misleading signals about financial development in

that the openness of the economy to capital flow, banking sector competitiveness and government borrowings from the financial system are not accounted for as factors. Also, bank credit to the private sector as a ratio of GDP has flaws in that it does not adequately take into account non-performing loans and credit granted by non-bank financial institutions and the impact of commercial bank lending to other financial intermediaries. Figure 3.2 shows that financial intermediation is less developed in SSA than other emerging markets. The financing of the economy by the banks is measured by the ratio of banking system credit to the core private sector (CP) to GDP. The private sector credit to GDP in SSA amounts to 18% whereas it is two times higher in Asia at 45% and 22% in Latin America. Cash transactions seem to prevail, as shown in the lower M2-to-GDP ratio, non-cash forms of money are lower than in other emerging markets. Non-Cash forms of money are 42% in SSA, 123% in Asia and 56% in Latin America.

**Figure 3.3: Access to Financial Services in Regions of the Emerging Economies.**

**Source: Adapted from Roy (2007)**

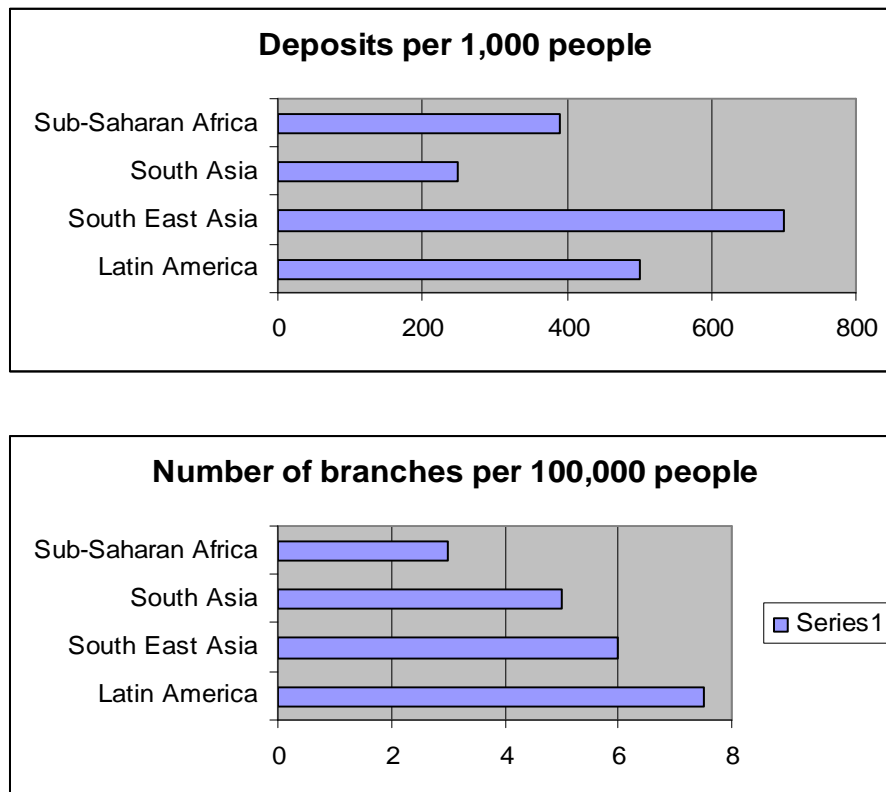


Figure 3.3 shows the level of access to finance in all the regions of the emerging markets. Ndulu (2007) defines access as “ensuring provision of financial services that entail appropriate products, reasonable cost and physical proximity”. In SSA, only a disproportionate small fraction of the populations is served by formal financial institutions. It has 2.8 branches serving 100,000 people compared with 5 branches to 1000,000 people in South Asia whereas in Latin America, it reaches nearly 8. New data suggest that not more than 20 percent of African adults have an account at a formal or semiformal financial institution (Roy 2007; Honohan and Beck 2007).

### **3.5.3 Financial Infrastructure and Incomplete Financial Systems**

The financial infrastructure of a country shapes the structure, organisation and performance of the finance industry and the process of capital formation, and therefore the mortgage market development strategies (Renaud 2008; Boleat 2008). This is done when attempts are made to increase the depth and breadth of their financial markets. One of the indicators for measuring financial deepness of an economy is the total deposits within a financial system as a percentage of GDP (Vatnick 2008). The organisation and structure of the financial system also plays an important causal role in the quality and rate of economic growth (Goldsmith 1969; Bhattacharya 1997; Levine et al 2000; World Bank 2001).

Bossone et al (2003) include the following components under the term “financial infrastructure”

- The legal and regulatory infrastructure includes bankruptcy codes, enforcement and conflict resolution mechanisms, financial corporate governance and institutions.

- The Information infrastructure is the public registries, credit bureaus, financial and industry analysts, laws and rules about disclosures. Warnock and Warnock (2008) considered public registries and credit bureaus as medium where current information on repayment history, unpaid debts or credit outstanding are kept. However, Djankov et al (2007) described public registries as a database owned by public authorities that collect information on the standing of borrowers in the financial system and makes it available to financial institutions. Private credit bureaus are defined as a private commercial that maintains a database on the standing of borrowers in the financial system. Exchange of information amongst the financial institutions is considered to be its primary role. Pagano and Jappelli (1993), Jappelli and Pagano (2000 & 2002) observed that public registries and credit bureaus exist in large number in developed economies and they have been of immense importance in determining credit availability.
- In bank-lending, it is either a transaction-based lending or relationship-based lending. In transaction-based lending, information about borrowers is sourced through financial statements, assets ownership and credit scoring (Lehman & Neuberger 2001; Kroszner & Strahan 2001 and Berger & Udell 2001). Due to the dearth of informational infrastructures, lending in emerging countries is largely relationship-based (Boot 2000; Ratha et al 2008). However, Elyasiani and Goldberg (2004), Diamond (1991 & 1984), Leland & Pyle (1977) argue that bodies of information could be sourced from large lending institutions which could be used in credit decision process. In relationship-based lending, frequent and regular dealings allow the parties to learn a lot about each other (North 1990 p.55; Jaffe & Louziotis Jr 1996 p.142). Elyasiani and Goldberg (2004) noted that

relevant information is gathered about the prospect and creditworthiness of the borrower in the course of their intermediation relationship hence the credit history of borrowers might not be put into consideration in assessing their creditworthiness. However, Boot (2000) and Elyasiani & Goldberg (2004) argued that the development of relationship-based banking has aided the lender in monitoring and screening in order to overcome the problems of asymmetric information.

- The risk-pricing infrastructure includes government securities markets, sub-national bond markets and private sector bond markets.
- The payments and settlements systems: clearing and settlements systems, rules and standards. The setting up of efficient securities trading and settlement system enhances economic growth with effective reduction in transaction costs (Bhattacharya et al 1997; Renaud 2008). Due to lack of financial infrastructure, while most financial systems in the developed world are completing their clearing and settlements within 24-48 hours, many countries in the emerging world are having their clearing and settlement systems completed in five days (120 hours).
- The financial stability infrastructure: Liquidity facilities and other safety net facilities. For any form of long-term lending, for effective risk management, there should be financial stability infrastructures. Importantly, these deposit-taking institutions are mostly using short-term liability to fund long-term assets and they are usually exposed to mismatch risk. In most of the emerging economies, there is limitation to the use of financial stability infrastructure.

#### **3.5.4 Advances in Information Technology**

Advances in information technology has improved the efficiency of housing finance system in developed economies in that it resulted in the ability of mortgage institutions to

design tool to meet specific risk profile using credit scoring. If the advantages of information based technologies are embraced in the emerging economies, the pace of economic progress and reforms can be accelerated.

The integration of financial markets has been considered as an important aspect of the globalisation process which has been extensively discussed (see Griffith Jones & Gothschalk 2003; Huang & Wajid 2002; Hausler 2002; Prasad, Rogoff, Wei & Kose 2003; Stiglitz 2002, 2003, 2004 and Obadan 2006b). Obadan (2006b) argues that increase in financial globalisation has been elevated by factors amongst which are improvements in technologies for collecting, processing and disseminating information; competition among the providers of intermediary services and increased private savings for retirement have stimulated financial innovation.

Credit scoring as means of measuring credit risk is gaining ground in the Latin America (Ferguson 2004), in existence in Egypt (Economist 2007) and is being used in the Asian countries. A consortium of eleven banks in Nigeria (Access Bank, Bank PHB, Diamond Bank, First Bank, FCMB, GTB, Intercontinental Bank, Stanbic IBTC Bank, Standard Chartered Bank, Union Bank and United Bank for Africa) floated a credit bureau company in collaboration with a foreign firm, Dun and Bradstreet (D&B) a credit reference company (Oke 2009). The establishment of credit bureaus and the use of credit scoring will aid lenders in having more effective and objective gathering and processing of borrowers credit history allow for a more precise measurement of credit risk.

### **3.5.5 Funding of Mortgage Loans**

If the funding of mortgage loans is left primarily to the deposit-taking institutions, they can only supply mortgage loans through deposit mobilised which are short-tenured. As a consequence of the high proportion of short-term liabilities in their deposits, they tend to lend short according to the commercial bank loan theory and the real bill doctrine. The

theory stipulates that bank loans should be short-term and self-liquidating because commercial banks usually have short-term deposits. According to the theory, banks should not grant long-term loans such as housing / real estate loans or loans for financing purchase of plant and machinery because they are considered too illiquid (Elliot 1984; Ritter & Silber 1986 as cited by Soyibo 1996)

A large percentage of financial institutions in the emerging economies are still adopting the business model used in the era of market-making (1970s-1980s) in the US relying on short-term deposits liabilities to fund long-term mortgages assets (USDHUD 2006; Cho 2007), which are contradictory to the tenets of the commercial bank loan theory. This model had a unique shortcoming under volatile interest rate environment where lenders are borrowing short-term and lending on long-term basis at high interest rates that results in dampened housing finance demand.

A well-functioning primary mortgage market requires adequate funding sources and variety of lenders in the primary market to promote further development. This includes savings mobilisation and simple mortgage-backed debt instruments to offer lenders funding alternatives (Roy 2007). Lenders in the primary market would include non-depository mortgage specialists, non-governmental organisations (NGOs), microfinance institutions (MFIs) and contractual savings systems (Follain and Zorn 2000; Warnock and Warnock 2008). In Asia, the financial sectors in countries such as China, South Korea, Malaysia, Singapore, India and Indonesia are large and well developed (UNCHS 2007). Whereas, domestic debt markets in most SSA countries (except South Africa) are in the developing stage and others in their infancy stage.

SSA has 15 organised securities markets and the region's financial sectors are characterized with a limited range of investment instruments particularly for longer

tenors except the Johannesburg Stock Exchange (Roy 2007; Irving & Manroth 2009). Scale issues in equities have been mirrored in the bond market, where only a limited number of private bonds have been listed and there is little secondary market trading (Merrill and Tomlinson 2000; Roy 2007). The major reason for the smallness of the securities market is lack of investors; in that insurance companies and pension funds are too small to act as major institutional investors. Despite the fact that insurance companies are allowed by statute to invest in real estate, they lack the necessary long-term funds for investment (Roy 2007).

### **3.5.6 New and Innovative Sources of Funding Housing Finance Supply**

There is the need to mobilise long-term funds in order to improve the supply of housing finance in the emerging economies. While few countries have identified the opportunities to be creative and pro-active in product designs to mobilise long-term, some other countries have been passive and continued over-looking the glaring opportunities. The new and innovative financial products include issuance of diaspora bonds, migrant remittances and bonds / pension funds. These products with their characteristics are discussed in the next section.

#### ***3.5.6.1 Issuance of Diaspora Bonds***

A diaspora bond is a debt instrument issued by a country or a private corporation to raise financing from its residents in a foreign country (Chander 2001; Ratha et al 2008). There are countries in emerging countries that have adopted this form of instrument to raise long-term funds like India and Israel, which raised \$11 million and \$25 million respectively from diaspora bonds (Ketkar & Ratha 2007; Ratha et al 2008). As at 2006, the South African government was planning to issue Reconciliation and Development Bonds targeted at their residents abroad, expatriates and domestic investors (Bradlow



2006; Ratha et al 2008). Ghana is selling a Golden Jubilee Savings Bond to Ghanaians in Europe and the United States (Ratha et al 2008) and Kenya launched its form of diaspora bond in 2008.

Diaspora bonds have that selling point of the desire by the residents abroad of the need to contribute to the development of their home country. It is an alternative to investing directly in their countries of origin that might lead to mismanagement and misappropriation of working capital by relatives, friends and even employees. Despite the potential market for diaspora bonds, some of the countries in the emerging world are still struggling with weak and non-transparent legal systems for contract enforcement and a lack of effective regulations on their financial intermediaries (Chander 2000; Ketkar & Ratha 2007; Ratha et al 2008).

#### **3.5.6.2 *Migrant Remittances***

Remittances are defined as the sum of workers' remittances, compensation of employees and migrant transfers (World Bank 2007). Remittances are considered as a stable source of external finances that can be effectively utilised for developmental purposes, one of which is housing finance that requires long-term funding. Remittances have contributed to the alleviation of poverty and had a positive influence on macroeconomic growth by increasing national disposable income (Catrinescu et al 2009). Lucas (2005) specifically cites countries like Morocco, Pakistan and India as case studies where remittances have accelerated investment in those countries. In Ghana and SSA studies, it has also been concluded that remittances reduces poverty in the recipient countries (Adams 2006; Quartey 2006; Adams et al 2008 and Gupta et al 2009). In countries of the emerging economies, remittances can also improve capital market access of banks and governments in poor countries by improving their ratings (Ratha 2006; Ratha et al 2008). However,

there has been a contrary opinion by Chami et al (2005) study using a panel of data for 113 developing countries argues that immigrant remittances have a negative effect on economic growth and cannot be a source of capital development, which has been severally debunked.

There is a body of knowledge in the form of research documenting the role of transfers from migrants to their home families in risk-sharing, informal credit and altruistic arrangements, that is, family obligations and assistance (Johnson and Whitelaw 1974; Lucas and Stark 1985 p.902; Rosenzweig and Stark 1989; Illahi and Jafarey 1999). However, El badawi and Rocha (1992) as cited by Chami et al (2005) divides the causes of immigrant remittances to “endogenous migration” and the “portfolio approach”. It is specifically noted that remittances can effectively be used to acquire assets like land, housing and other financial assets (Osili 2004; Black 2003).

The worldwide total remittances made up of unrecorded flows through formal and informal channels are considered to be in excess of \$276 billion in 2006 (World Bank 2005, Chapter 4). However, the recorded remittances sent home by migrants from developing countries increased from \$193 billion in 2005 to \$206 billion in 2006 (World Bank 2007). Remittances to developing countries have increased on average by 16 percent in annual terms since 2000 (Gupta et al 2009; Page and Plaza 2006).

**Table 3.3: Global Flows of international migrant remittances in (\$ Billions)**

**Source: World Bank 2007: Global Development Finance**

	2000	2001	2002	2003	2004	2005	2006e
Total	85	96	117	145	165	193	206
By Region							
East Asia and Pacific	17	20	29	35	39	45	47
Europe and Central Asia	13	13	14	17	23	31	32
Latin America and the Caribbean	20	24	28	35	41	48	53
Middle East and North Africa	13	15	16	20	23	24	25
South Asia	17	19	24	31	31	36	41
Sub-Saharan Africa	5	5	5	6	8	9	9

Note: 2006 Figures are estimates.

From Table 3.3, the Latin America and the Caribbean Region stands out as the largest recipient of recorded remittance. As mentioned in Section 3.3, informal developments contributes about 85 percent to land and housing development in SSA and also most of the transfers and remittances coming to SSA are done through the informal sources. It is presumed that unrecorded remittances is large in SSA because the formal financial infrastructures are limited (Sander and Naimbo 2003 as cited by Page and Plaza 2006). The World Bank (2007) noted that due to lack of data, as usually remittances flow to SSA are largely consummated through informal methods, it has been grossly underestimated.

It is observed that recorded remittances have grown in all the regions of the emerging economies between 2000 and 2006. World Bank (2007) argues that the growth of remittances flow is slowing down in the Latin America and the Caribbean region due to the slowdown in the housing sector in the United States. However, remittances to other

regions especially South Asia is held up by the strong economy in the migrant-receiving countries in the Persian Gulf Region and Europe.

### **3.5.6.3 Bonds and Pension Funds**

The Bank of International Settlement Paper No 11 (2002) presumed the major reason for developing bond market in most countries of emerging economies is predominantly to finance government deficits. It was explained that since they had a highly regulated financial sector before the 1980's, governments in these countries usually meets their funding requirements by making it mandatory for local banks to hold government paper as part of reserve requirements. With the progressive liberalization of the financial systems, adoption of anti-inflationary policies and flexible exchange rate, governments were being forced to borrow from the domestic market.

Blommestein and Horman (2007 p. 17) in assessing debt management and bond markets in Africa described the situation in South Africa and Nigeria as follows: "The bond markets in South Africa are relatively advanced. There is a well developed market for government securities, and corporate bonds have seen significant growth in recent years, although the latter still account for only 10 percent of the bond market". For Nigeria – "Successful initiatives regarding domestic securities have included lengthening the maturity structure and smoothing the redemption profile. Much of domestic issuance is undertaken not to fill a funding gap but, instead, to provide securities to the market for its development".

The arguments raised by BIS (2002) and Blommestein & Horman (2007) regarding the essence of issuing bonds in the emerging economies are fallacies. Specifically in 2008, the Federal Government of Nigeria raised \$400 million from the capital market to finance affordable housing projects. Out of about \$300 million bond raised by the Federal

Mortgage Bank of Nigeria (FMBN) earlier on in 2004/2005, FMBN has disbursed a total of \$94 million through 41 primary mortgage institutions (PMIs) to individuals and \$188 million disbursed to private estate developers for estate construction as at December 2007 (Onyebuchi 2008).

Pension funds are now considered as significant institutional investors in the present day financial market. Pension fund assets have grown substantially in the last three and half decades for the following reasons – the better economic prosperity has increased the earnings of individuals with part of their earnings being devoted to securing their financial futures. Also with greater life expectancy due to better health services, more people are demanding for pension product, which attract significant tax concessions relative to other savings products.

The pay-as-you-go social security systems in the emerging economies are being replaced by fully funded, defined-contribution pension systems (Chan-Lau 2005). With this reform, assets under management in the pension fund subsector of these economies are fast growing. Chile, the most sighted example of pension fund development in emerging market economies with its bond market development, launched a funded pension system in 1981. By 2003, Chile pension assets were 60 percent of GDP, Bolivia pension assets were 30 percent of GDP in 2005 which was only six years after the introduction of pension reforms (BIS 2002; Chan-Lau 2005).

Roy (2007) and Renaud (2008) argue that an effective and efficient housing finance system is not only about granting housing loans but also mobilisation of resources from the surplus sector to the deficit sector for entrepreneur activities. With the removal of government bureaucracy from the savings for retirement process, pension reform has contributed to improvement in savings rates in Chile, Malaysia, Singapore and Korea.

Mackenzie et al (1997) and Chan-Lau (2005) argued conditions under which pension reform can increase a country's savings rate. Chan-Lau (2005) noted that mostly in Asia, retirement income is the sole responsibility of government through National Provident Fund. In Malaysia and Singapore, governments sponsor a fully funded, defined-contribution system for civilian workers but in Korea, the national pension system is fully funded but offers defined-benefits.

Defined contribution pension (DCP) plan has a fixed contribution usually based as a percentage of the employee's salary. The benefit is dependent on how the portfolio performs with no guarantee of how much could be received on retirement. On the other hand, the defined benefits plans are usually funded by the employers through tax-exempt contributions and automatically cover all qualified employees. Retirement income is independent of market performance and usually adjusted for inflation.

However, Asher (2000), Holzmann et al (2000), Chan-Lau (2005) observed the main challenge to the systems being government intervention in the funds' investment decisions. By and large, the expanding pension funds in emerging economies may be having capital to invest in real estate-related assets, but they are mostly forced by regulation to invest in government backed bonds (OPIC 2000).

In Sub-Saharan Africa, for example in Nigeria, with the introduction of a fully funded, defined-contribution pension system through the Pension Reform Act of 2004, the pension fund was valued at \$6.67billion as at December 2007 compared to pension funds under management in the United States estimated to be \$7trillion in 2002 (Pilbeam 2005).

The contribution for any employee to which the Act applies was made specifically under Section 9 (1) a, b, c.

The Pension Funds investments in Assets by the pension fund administrators (PFA) were specified under Section 73 (1) as follows:

Pension Funds assets shall be invested in any of the following

- (a) bonds, bills and other securities issued or guaranteed by the Federal Government and the Central Bank of Nigeria;
- (b) bonds, debentures, redeemable preference shares and other debt instruments issued by corporate entities and listed on a Stock Exchange registered under Investments and Securities Act 1999;
- (c) ordinary shares of public limited companies listed on a Stock Exchange registered under the Investments and Securities Acts of 1999 with good track records having declared and paid dividends in the preceding five years;
- (d) bank deposits and bank securities;
- (e) investment certificates of closed-end investment fund or hybrid investment funds listed on a Stock Exchange registered under the Investments and Securities Act 1999 with a good track records of earning;
- (f) units sold by open-end investment funds or specialist open-end investment funds listed on the stock exchange recognised by the Commission;
- (g) bonds and other debt securities issued by listed companies;
- (h) real estate investment; and
- (i) such other instruments as the Commission may, from time to time prescribe.

These investments by the PFA's create opportunities for Federal Government of Nigeria and State Governments to have access to funds when bonds are floated for long-term investment purposes (Udenze 2006).

### **3.5.7 Risk in Mortgage Lending**

Risk has been identified as a unique factor that have hindered housing finance worldwide though it has been averagely managed in developed economies through creative financing structures. Risks in housing and real estate financing involve consumers, builders, financiers, capital market players, governments together with regulatory bodies. The exposure in the emerging economies is higher due to the macroeconomic situation in those economies as discussed in Section 3.4.1. Odenbach (2002), Heffernan (2003), van Order (2005) and Mints (2006) highlighted the following four major forms of risk peculiar to mortgage lending. They are:

**Default/Credit Risk:** Risk that an asset or loan becomes irrecoverable in the case of outright default, or the risk of delay in the servicing of the loan resulting in the present value of the asset declining. However, Mints (2004) argued that risk of default could not be managed because banks are not capable of assessing the borrower's income.

**Liquidity/ Funding Risk:** Risk of insufficient liquidity for normal operating requirements, that is, the ability or inability of the bank to meet its liabilities when they fall due. Funding risk is the inability of a bank to fund its day-to-day operations. Due to the fact that income is low in most of the emerging economies, interest rates on domestic savings with formal financial institutions are low and terms of savings rate changes eratically. Again, the inability to effectively manage the economies whereby the inflation rate is higher or in most cases is twice the savings rate discourages potential savers or investors from keeping their funds with the formal financial institutions. In SSA, countries are



grouped into different categories according to their gross domestic savings rates as at the end of 2006, the first category are countries with high potential to generate domestic funds for long-term financing with savings rates in excess of 35 percent like Nigeria (40), Chad (42) and Namibia (35). Also, the second category are countries with solid potential to generate 10-30 percent savings rate like South Africa (16), Cote d'Ivoire (28), Mozambique (20), Zambia (18), Cameroun (17), Sudan (14), Madagascar (14) and Tanzania (14) (Irving and Manroth 2009 p.5). Ndulu (2007) noted that in Kenya, for example, the savings rate of 19 percent to their GDP in the 1970s has dropped to 8.6 percent in 2000. In Ghana, gross domestic savings are 8 percent of GDP. However, the domestic savings rate in India and China are close to 38 percent and 23 percent of their GDP respectively (Bardan and Edelstein 2008).

**Systemic Risk:** This is a type of risk that affects a particular sector of an economy when policies are targeted to that particular sector. This type of risk might have a multiple effect on the economy generally. Let us say there is a financial crisis, the transmission of information about investments and firms, the allocation of credit and the transfer of risks may be disrupted. Also, the pricing of financial assets may be distorted, the clearing and settling of payments may be impaired and business and households may be unable to obtain financing for purchases or to withdraw funds from deposits at banks. An example at the hand is the present credit crunch affecting all the economies of the world, but is more pronounced in the emerging economies. However, on the whole these inadequacies result in disruption in the functioning of the housing finance market in which the extension of credit to households is disrupted (Ludwig 1995; Bartholomew and Whalen 1995 and OFHEO 2003).

**Interest Rate Risk:** Interest rate risk arises from interest rate mismatches in both volume and maturity of interest-sensitive assets, liabilities and off-balance sheet items. Odenbach (2002) argued that interest-rate risk affects a lender when the lender has issued long-term debt at relatively high costs. On the other hand, its customers take advantage of falling interest rate by prepaying existing loans (prepayment risk) and subsequently re-mortgaging at a lower rate. Again an unexpected swing in interest rates can seriously affect the profitability of the bank and the shareholder's value added (Hefferman 2003; Toby 2006).

### **3.6 Issues in Housing Finance Supply and Deficiencies in Past Studies.**

The organisation and structure of the financial system plays an important role in the quality and rate of economic growth. International experience and research in high income economies shows that a well functioning mortgage market will provide large external benefits to the national economy: efficient real estate development, construction sector employment, easier labour mobility, capital market development, more efficient resources allocation and lower macroeconomic activity (Renaud 2008).

Most of the tenure choice literature examines micro-level behaviour until lately when comparative studies are being undertaken (Fisher and Jaffe 2003). Apart from the efforts of the international agencies that have agitated for proper housing delivery through effective housing finance supply (Malpezzi 1999; Data and Jones 2001), it would appear that no concerted efforts have been made to develop a model for housing finance supply. Much of the effort in the literature has been on the demand side of housing finance market. Malpezzi (1999) elucidated the published studies to include Mayo (1981) - for developed countries, Malpezzi and Mayo (1985 & 1987)-for developing countries,

Follain et al (1980) studied urban Korea using survey data from 1976, Ingram (1984) applied 1978 data from Bogota- Columbia and Arimah (1994) studied Ibadan-Nigeria. However, Grootaert and Dubis (1986) provided rigorous attempts to conduct housing demand with respect to income, price, family size and age of family head.

In carrying out a research on the supply of housing finance in emerging economies, it is necessary to look at what makes supply of housing finance in developed economies efficient and cost-effective and whether the models can be used in the emerging economies. The Owner - occupation has been the segment of the housing market considered by Yamada (1999), Stephens (2003) and Smith et al (2006) to be dominant in all the world's richest societies except Germany. Arimah (1997) Rohe et al (2002), Stephens (2003), Song (2005), Bardhan & Edelstein (2008) and Dickerson (2009) highlighted the benefits of owner-occupation that is predominant in these developed systems to include households accumulating wealth over a period of time, development of civil society and living better quality of life with neighbourhood stability. Other benefits include secure supply of land with a good title (registered land) as pre-requisite for effective housing finance system. However, Arnott (2008 p. 9) argues that home ownership for the poor is highly risky taking cognisance of the recent rapid rise in the US subprime foreclosures. In the emerging economies, because the inhabitants are relatively poor compared with those in the developed economies, the most affordable and predominant tenure system has been rental tenure system (Wallace 1995; Kim 1997; Arnott 2008)

There have been empirical studies (Feder et al 1988; Feder & Nishio 1998 as cited by Byamugisha 1999; Kalabamu 1994; Rabbawi 1997 and Groves 2004) which have

supported the position of land registration by issuance of Certificate of Occupancy (as is called in Nigeria). Specifically, Feder et al (1958) and Feder & Nishio (1998) established positive link between land registration and improved access to credit in rural Thailand. However, some empirical studies have proved otherwise. Studies done in the rural set up of Kenya, Ghana, Rwanda and Somalia regarding economic effects on land registration could not establish any significant relationship between land registration and investment / land productivity (Mighot-Adholla et al 1991; Carter et al 1991; Place & Mighot-Adholla 1998 as cited by Byamugisha 1999). Mabogunje (2002), Nubi (2005), Abdulai (2006 & 2007), Arnott (2008) and Iwarere & Megbolugbe (2008) argued that getting a land registered might not confer ownership on the holder of the Certificate.

In Nigeria, the Land Use Decree (LUD) was promulgated in March 1978 with that intention of eliminating anomalies in land transfers and the possibility of bona-fide land users to acquire lands at affordable prices with minimal encumbrances. Under the decree, all land was brought under the control of the state government and the rural land being controlled by the local government. This policy action would enhance the transformation of the nation's property rights from a mixed private property rights to a collectivist framework (Iwarere 1994; Arimah 1997).

As a result, all urban land is to be administered by a Land Use and Allocation Committee (LUAC), while the administration of rural land is the responsibility of Land Allocation Advisory Committee (LAAC). However, there are instances where more than one Certificate is issued on a plot of land. Tiwari and Debata (2008 p.60) attested to the problem of establishing property rights in India, where two mortgages could be taken on the same property. Hassanein and El-Barkouky (2009 p.255) discussed the lengthy and

cumbersome registration procedures which refrained people from registering lands and properties in Egypt. It is explained that the multiple visits by land surveyors might take the surveying procedures of lands to about six months. Furthermore in Nigeria, getting land registered takes a long time and anytime a transaction is to be undertaken on the land, it is compulsory to obtain the governor's consent of the state where the land is situated. Iwarere & Megbolugbe (2008 p.205) put it succinctly that:

“the contractual process precipitated by the re-assignment of property rights inherent in the leasehold estate (right of occupancy) to replace the freehold becomes more tedious and adversarial, an attribute it had hoped to improve upon. All told, the property rights regime ushered in by the land use is less efficient and does not promote growth”

The issue of land registration in the emerging economies have negatively affected the willingness of the supplier of housing finance to provide funds for housing acquisitions. In consideration of proper banking procedures, funds are not disbursed to borrowers until all lending conditions are met. So, applications for funds to acquire houses are kept in abeyance until the land registration procedures are completed and the documentations submitted to the suppliers of housing finance.

Another important issue in the previous studies has been the use of securitisation as a mortgage funding tool. The adoption of securitisation as a form of credit risk transfer (CRT) process by issuing Mortgage-Backed Securities (MBS) has been successfully utilised as mortgage funding tool until year 2007. The issuance of MBS as medium of funding mortgages in the emerging economies has been extensively discussed. Ogwu (2006), Roy (2007) are of the opinion that using MBS as a mortgage funding tool is a way of having access to long-term funding. It was discussed in Section 3.5.1 that the

major problem of housing finance supply in emerging economies relates to macroeconomic volatility and in Section 3.5.3 where discussion centred on inadequacies of financial infrastructures in most countries of the emerging market.

These two important shortcomings might make MBS as means of funding mortgages in emerging economies problematic. Saayman and Styger (2003) and USDHUD (2006) noted that for a flourishing MBS markets, two important preconditions must be met. They are: (1) Favourable government policies for securitization such as the implicit and explicit guarantees like the United States provided for its securitisation scheme (2) A strong demand for and supply of liquid mortgage-backed securities. Can these conditions be met in most of these countries?

Furthermore, with the misapplication of securitisation as mortgage funding tools by Northern Rock (a financial institution in United Kingdom) in 2007, there has been a re-assessment of securitisation as mortgage funding tool. Llewellyn (2008), Jaffee et al (2008), Shin (2009), Milne and Wood (2009) and Keys et al (2009) observes that financial institutions are issuing MBS and other wholesale capital-market funding instruments on short – term basis whereas these funding instruments requires a planned maturity profile. The planned maturity profile would allow for proper asset-liability management resulting in that ability by financial institutions to provide long-term funding for housing acquisition.

Though, the purchase of mortgage insurance is an additional cost to borrowing for mortgage acquisition. By statute, it is compulsory in most of the developed economies to achieve relative success in their mortgage finance schemes. Despite various scholarly works that have been produced recently on housing finance in emerging economies, and

the various forms of risk in mortgage lending, concerted effort has not been made in agitating for mortgage insurance in emerging economies except in a few publications (Tiwari 2001; Bardhan et al 2006; Akinwunmi et al 2007).

### **3.7 Summary**

It has been identified through various studies that the financial infrastructure of a nation shapes the structure, organisation and performance of the finance industry and the process of capital formation and the mortgage market development strategies in both developed and emerging economies. Specifically, housing and housing finance in emerging market economies has been subjected to various limitations like inadequacy of legal and regulatory infrastructure, macroeconomic volatility, high transaction costs associated with the lack of adequate loan management practices and infrastructures for mortgage processing.

Despite the orthodox view that a secure supply of land with a good title (registered land) is a pre-requisite for effective housing finance system, efforts to get land registered and governments to be the sole custodian of land has been a disaster in most emerging economies. The idea of land registration has slowed down the process of housing finance disbursement and eventual supply. It can further be argued that the underdevelopment of mortgage lending to individual households can be explained by lack of demand for mortgage lending which might be due to high credit risks, lack of financial depth which translates into high interest rates on mortgage loans, the limited long-term credit resources of originating banks resulting from failure to develop secondary market financing. This anomaly has hitherto been tackled in the developed economies through the introduction of stable funding source and asset-liability management tools like securitisation, credit derivatives, collateralised debt obligations (CDOs) and mortgage covered bonds (MCB).

For most of the emerging economies, a combination of economic and social factors, such as low domestic savings rate, high price-to-income ratios and a general culture and social predisposition towards homeownership, suggests that the common problem facing them lies in the provision of housing finance services that can allocate untapped resources. Some of these untapped resources could be identified as the innovative sources of funding housing finance which are peculiar to their situations like diaspora bonds, migrant remittances and pension funds.

However, this study is looking at factors affecting housing finance supply which could be critically assessed based on the quality of the bank balance sheets (liability side) made up of the following components namely capital structure, deposit structure and other liabilities. It is on this basis that in the next chapter, the emphasis is on financial intermediation and housing finance supply as the theoretical perspective to the study.



## **CHAPTER FOUR**

### **THE THEORETICAL PERSPECTIVE TO HOUSING FINANCE SUPPLY**

#### **4.1 Introduction**

In the last two Chapters, efforts have been made to look at the factors affecting housing finance supply in both developed and emerging economies. In Chapter Two, in particular, the developed economies have taken investment in housing as part of economic growth and development. This is considered as a long term rise in capacity to supply increasingly diverse economic goods including housing to its teeming population. The growing capacity is based on advancing technology with the institutional and ideological adjustment it demands.

However, in Chapter Three, the situation in the emerging economies has been critical. The driving force of economic growth and development as enunciated by Schumpeter (1921) which include mobilisation of savings, efficient capital allocation, effective risk management, ease of transactions with advancing technologies are lacking. In an effort to provide housing and subsidised housing finance, various central governments have established institutions to provide housing finance. Even with the establishment of these institutions, their management has been affected by political and other negative factors that are not favourable for business survival.

It is on this premise that a theoretical perspective is being formulated for this research. Therefore, the theoretical framework of this study is based on the New Neoclassical Economics (NNE) which is an integration of Neoclassical Economics and Transaction Cost Economics. To achieve the above, the Chapter is divided into eight sections. The first is the introduction, the second section examines the overview of New Neoclassical

Economics and third section discusses Transaction Cost and theory of financial intermediation referred to as the traditional theory of financial intermediation. Risk management in financial intermediation is being discussed in section four. How macroeconomic policies affects housing finance in emerging economies is the focus of section five while section six examines subsidy in housing finance in emerging economies. Section seven discusses constraints to mortgage lending in Nigeria and section eight examines the theoretical framework for the model with the identified variables to be tested. The final section of the chapter is the summary.

#### **4.2 An Overview of the New Neoclassical Economics.**

The neoclassical economics perspective looked into the dynamics of prices and quantities though largely an institution-free perspective in which only function matters (Merton & Bodie 1995; North 1994, as cited by Merton & Bodie 1995). Thereafter, Williamson (1985 p.16 and 1988) in discussing the New Institutional Economics highlights the functional perspective of the financial system.

The basis of economic theory is that commercial transactions are the prime drivers of economic growth such that the more frequently transactions take place, the higher the potential of economic growth. For economic growth and development, Schumpeter (1912) argues that financial intermediaries like banks and other financial institutions mobilise savings, allocate capital, manage risk, ease transactions and monitor firms. It is in this process of lending that financial intermediaries are considered to be utilizing resources and contributing to economic growth and development and there are evidences to support Schumpeter's view that financial institutions promote development (see Fry 1988; King and Levine 1993; Benhabib and Siegel 2000; Arestis et al 2001; Wachtel 2001 and Scholtens & Wensveen 2003).

Further in the literature, one of the biggest problems faced by the banks is lack of information about the promoters and the projects to be financed with the bank facilities (Jones & Maclellan 1987; Altman & Saunders 1998; Byamugisha 1999; Guzman 2000 and Mints 2006). Therefore, the economics of information, which has been a great contributor to the standard Neoclassical Economics since the late 1970s' is considered to be relevant to this study.

The New Neoclassical Economies (NNE) is an integration of Neoclassical Economics (NE) and Transaction Cost Economics (TCE), with a primary role for NE but without losing sight of TCE. Among the presentations that assume part of the role of TCE in the framework of NE, is the information economics survey by Stiglitz (2000). The new information economics, he claimed, not only showed that institutions mattered, and explain why the institutions arose and the forms they took, but showed why they mattered. He noted that Arnott and Stiglitz (1991) showed that non-market institutions could even exacerbate the consequences of market failure, which was earlier articulated by Coase (1960 p.27).

Coase (1960 p.18) argued that if the costs of handling through the market are high and if the net costs are lower, only then may government regulations be relevant. However, the design of appropriate government interventions can be problematic to the extent that on occasions it brings into serious questioning the suitability of government interventions as the only option in correcting market failures (Coase 1960; Hammond 2006a & 2006b). The mere failure of private industry, when left from public interference, to maximise national dividend does not itself warrant intervention; for this might make things worse. When issue of accountability is not on the agenda, governments in most of the emerging economies monopolizes resources and power, and this monopoly is often worse than that

of the private sector in the sense that the former entails larger TC and hence much more social costs relative to the latter. Hurwics (1973) noted that whenever information is imperfect and/or markets are incomplete, competitive markets do not obey the Pareto-optimality efficiency criterion. Also, in NE literature, Kogiku (1971) noted that a competitive equilibrium ceases to produce Pareto-optimality when there are externalities that affect the system. However, Stiglitz (2000 p.1458) concluded without taking cognizance of associated TC, that “Government interventions, in form of, say taxes or subsidies on commodities – will lead to Pareto improvements”. In line with the discussions and conclusion above on transaction cost, the next section then examines transaction cost and the theory of financial intermediation.

#### **4.3 Theory of Financial Intermediation and Transaction Cost**

The current theory of financial intermediation concentrates on transaction costs and asymmetric information, but is inadequate in explaining the current complex financial transactions. It is therefore, referred to as traditional approach to financial intermediation. The financial intermediaries were considered as institutions being used to execute government monetary policies (Benson and Smith Jr. 1976), without contributing to economic growth and development. The assertions might be right in the case of financial intermediaries in the emerging economies, due to the level of their economic growth. The financial intermediaries in the developed economies have gone through stages of development and by their functioning and operation they are contributing to the economic growth of their domiciled environment. The success in the theory of financial intermediation can only be appreciated when a financial market is not perfect. As noted by Berger et al (1995), a large percentage of past research on financial institutions has

identified assumed imperfections like taxes, costs of financial distress, transaction costs, asymmetric information and importantly regulation.

In terms of regulation, which can either be structural or prudential, the government regulates the financial market to ensure financial stability as well as addressing problems of asymmetric information and moral hazard. While structural regulation limits the degree of risk that an institution can take in order for government to protect investor's funds and exposure limits of the financial institutions (Pilbeam 2005), prudential regulation takes care of disclosure requirements, capital adequacy and liquidity requirements.

Even with the identified importance of effective regulations of financial institutions, Llewellyn (2008), Milnes & Wood (2009) and Shin (2009) in discussing the Northern Rock situation highlighted problems in the regulatory framework of the British Financial System. Few of the identified problems include: inadequate role of government in responding to financial market distress and ambiguity in regard to the distinction between liquidity and solvency issues in banks. Llewellyn (2008) suggested that in any regulatory / supervisory regime, four areas that need to be addressed include prudential regulation of the financial firms; management and systemic stability; lender-of-last resort function and conduct of regulation and supervision business. The lack of adequate regulation has resulted in lending behaviour of financial intermediaries being out of tune with economic realities. This has resulted in the lending standard being disconnected from economic fundamentals (Markowitz 2009; Jones and Watkins 2009) and the banks failing with great speed exposing flaws in the regulatory system designed to identify failing institutions (The Wall Street Journal 2009).

Also, (Scholtens and van Wensveen 2000 & 2003) are of the opinion that there is imperfection in the market when information is not flowing freely (information asymmetries). In the absence of information asymmetries, due to deregulation and deepened financial market, improvement in information technology and reduction in transaction cost, which are attributes of the financial markets in the development economies, the relevance of financial intermediaries reduces greatly.

While transaction cost highlights role of these intermediaries in the distribution function, the emphasis on the information asymmetries revolves around the origination and servicing function (Merton 1989; Allen & Santomero 1998). This is due to the fact that these institutions are considered as information sharing coalitions (Leland & Pyle 1997) and they can achieve economies of scale and act as delegated monitors on behalf of their customers (Diamond 1984; Scholtens & van Wensveen 2003). Therefore, they can deal with individuals and transact business with their dynamic strategies at minimum cost than individuals doing their businesses which might result in high transaction cost.

The transaction cost is not limited to foreign exchange and cost of borrowing (Tobin 1963; Towey 1974; Fischer 1983), it also includes costs of auditing and monitoring, search costs etc which are high in most of the emerging economies. The transaction costs in these economies are high because of implicit and explicit costs of doing business which ultimately reflects on the cost of borrowing for property acquisition. Pagliari (2007) noted that in acquisition and disposition of privately held real estate, transactions cost are high which reduces returns on that type of investment. The transaction cost in this type of investment includes cost of travelling in the course of acquiring and disposing the real estate, legal fees, due diligence costs, brokerage commissions and transfer taxes depending on where the transaction is taking place.

The argument goes further from the observation made by Levine (1997) that informational asymmetries and transaction costs reduces liquidity and increases liquidity risk. These asymmetric information and other credit market frictions has various effects in the financial markets. These shortcomings, observes Levine (1997) create the incentives for the establishment of institutions that augments liquidity with the intentions of increasing their profitability. Chiuri and Jappelli (2003) were of the opinion that in the quest of the financial intermediaries to accumulate savings in form of liquid wealth, the lenders (financial intermediaries) requests potential borrowers to make down-payments in arranging funds for property acquisition. This down-payment is becoming a unique factor in determining when most first time buyers start climbing the property ladder. In the US studies, Duca & Rosenthal (1994); Haurin et al (1997) observed that the down-payment drives mortgage availability and the timing of property acquisition by first time buyers. Ortala - Magne and Rady (1998 & 1999) examines the economic impact of down-payment.

In the financial systems, the bank-based model has the attributes to acquire information about firms, thereby improving corporate allocations (Diamond 1984; Ramakrishnan & Thakor 1984), manage cross-sectional, inter-temporal and liquidity risk in an effort to enhance investment efficiency and economic growth (Allen & Gale 2000; Bencivenga & Smith 1991). In attracting projects with high returns to an economy, there should be capital to fund it (Levine 1997) and at the right price. As it was argued by Vatnick (2008), a lower cost of capital is important for economic growth because it induces rising investment and higher rate of capital accumulation for faster economic growth. Therefore, the financial intermediaries are expected to be liquid to provide funds for the projects, it translates to the fact that there is linkage between liquidity and economic development.

In most of the emerging economies, because their disposable income is low, a large percentage of salary earners do not have accounts with any financial institution. For those salary earners having accounts, all the money kept with the financial institutions as demand deposit is withdrawn few days after the salary is paid. For the secondary data collected for this study, the deposit profile of most of the Nigerian financial institutions had between 40 and 50 percent of their deposit profile as demand deposits, while the remaining 50-60 percent is shared between savings deposits and time deposits (see Appendix V). If the demand deposit liabilities are utilised in funding long-term high-return projects, these type of lending is not in tandem with the commercial bank loan theory and the financial system is accommodating both liquidity and mismatch risks.

Therefore, if the liquidity risk can be eliminated or reduced to the minimum level, financial intermediaries can invest in long-term projects and thereby accelerate economic growth (Bencivenga & Smith 1991). As Merton (1995) and Cho (2007) observes, the focus of financial institutions has shifted into trading of risk, bundling and unbundling of risks in various financial undertakings. In the next section, discussion is being focussed on risk management.

#### **4.4 Risk Management and Financial Intermediation**

The current theory of financial intermediation concentrates on transaction cost and asymmetric information and they are considered to be inadequate as tools to explain the fundamentals of financial intermediation, which is risk management. Therefore, their contributions are being classified as traditional and old. Moreover, there are two aspects to the lending operations of the financial institutions. The ability of the financial institutions to lend determined by the strength of their balance sheets and the willingness of these institutions to lend as risk managers.



In the banking literature, capital adequacy is one of the five key variables identified in measuring bank balance sheet strength while others are asset quality, management, earnings and liquidity (Rojas-Suarez 2002; Heffernan 2003; Buckle and Thompson 2005). The capital adequacy regulatory rules have impact on the bank behaviours (Dewatripont and Tirole 1994; Freixas and Rochet 1997; Chiuri et al 2002). It is argued that there are two ways by which these rules affect bank behaviours. Firstly, it is known that capital adequacy regulatory rules strengthen bank capital and improves the resilience of a bank to negative shocks and secondly, capital adequacy affects banks in risk taking and management behaviour.

It has also been argued by various authors (Allen 2004; Pan 2008) that capital adequacy rules like Basel II may impact the banking system's ability to extend loans and advances to the productive sector of the economy. When capital requirement arises and with capital constraints in most countries of the emerging market due to lack of depth in their capital markets, the banks adopt a risk-shifting model as means of risk management. Risk management is about managing a mismatch between supply of funds and the demand for investments and these risks could be credit risk, liquidity risk, systemic risk, mismatch risk or interest rate risk (Odenbach 2002; Heffernan 2003; van Order 2005; Mints 2006 and Akinwunmi et al 2007 & 2008a). With risk management being the core business of the financial intermediaries, (Dewatripont & Maskin 1995; van Thadden 1995) opinionated that financial institutions operating in a market-based financial system, due to competition, will have their inefficiencies associated with banking activities reduced and thereby promote economic growth.

Saunders (2002) analyses a risk-shifting model as a process whereby financial institutions, banks in particular, in an effort to meet up with new capital requirements

moves away from low-yielding loans to high risk loans in expectation of high earnings. Furthermore, Caprio Jr. et al (2008) argue that risk-shifting takes place at every stage of financial engineering. If these loans eventual pay – off, banks meet up with their higher capital requirements from loan profits, otherwise they are liquidated.

Basel II, as a regulatory capital requirement tool induces a significant increase in risk-shifting and higher systemic risk with higher implied bailout costs for emerging market central banks and government (Saunders 2002; Allen 2004) rather than total liquidation, which is not encouraged in most countries of the emerging market. Therefore, an increase in capital requirements supports the risk-shifting (loan increasing) hypothesis rather than the capital constraint (loan decreasing) hypothesis.

One of the main roles of the financial intermediaries is the transformation of financial assets as a form of claims to other types of claim (qualitative asset transformation). In the process, some fixed assets are transformed from fixed assets to liquid assets. An example is fixed assets financed by the bank and being sold and converted to liquid asset, in the form of cash. The financial intermediaries, therefore, offer liquidity (Pyle 1971) and they have diversification opportunities (Hellwig 1991). In institutional transactions, diversification is very important as part of risk management and liquidity (transfer of assets to cash) is the back bone of relationships between savers and investors.

Most financial intermediaries in the emerging economies, rather than contributing to the promotion of economic growth, are only interested in improving their annual earnings and increasing profitability. They are therefore, endeared to market-based model of financial market with the characteristics of facilitating risk management (Obstfield 1994; Oldfield & Santomero 1997) and fostering greater incentives and profitably trade in big and liquid markets (Holmstron & Tirole (1993). As mentioned in section 4.3, financial

intermediaries deal with lots of individuals as part of their servicing function, and therefore, they create products with a relatively stable distribution of returns. It is necessary for the intermediaries to trade risk and be involved in risk management (Santomero 1997; Santomero and Babbel 1997).

The Economist (2008c) noted that in the September 2008 calculations, the IMF reckoned that globally, banks alone have reported just under \$600 billion of credit-related losses. Caprio Jr et al (2008), a world bank publication, noted that institutions have already written off losses of more \$500 billion, with an expected total in the range of between \$1 trillion and \$2 trillion with sovereign governments having provided over \$1 trillion (\$700 billion in US, £50 billion in UK etc) and many more write-downs are coming. Furthermore, the Economist (2008d) noted that a staggering total sum of £1,873 billion (US\$2,556 billion) was agreed for re-capitalisation and equity acquisition in the euro alone. France has pledged E320 billion in state-guaranteed lending to banks and E40 billion to re-capitalise banks in trouble while Germany's rescue package includes a state guarantee worth E400 billion to back banks' loans to each other, plus E80 billion to top up capital. It is noted that the demise of the investment banks, with their far higher gearing, as well as deleveraging among hedge funds and others in the shadow-banking system will add to a global credit contraction of many millions of dollars.

At this point in time, the dynamism brought into modern financial intermediation is being shaken with the demise of institutions within shadow-banking system made up of investment banks and hedge funds. But in response, governments across the emerging world are extending their reach, increasing subsidies, fixing prices, and in India, futures trading are being restricted. In the next two sections, macroeconomic policy and subsidies as it relates to housing finance in emerging economies would be discussed.

#### **4.5 Macroeconomic Policies and Housing Finance in Emerging Economies**

Regulatory factors are part of the *raison d'être* of financial intermediaries. Regulation plays an important role in the solvency and liquidity of the financial institutions. Hence, the Central Banks all over the world have adopted various macroeconomic policies in monitoring financial institutions within their countries of operation. With the magnitude of housing needs in most of the countries in the emerging economies, Buckley & Kalarickal (2004), Hassler (2005) and Akinwunmi et al (2008a) argued that a stable macroeconomic condition is one of the requirements that emerging economies must embrace and attain. These macroeconomic policies are impacts of exogenous intervention at the aggregate or economy-wide levels (Burda & Wyplosz, 1997; Hammond 2006 and Roy 2007). Macroeconomic instability and its corollary of high and volatile domestic interest rates have a disproportionate impact on long-term mortgage finance. Various factors contributes to greater macroeconomic volatility in emerging markets, the most important is that their production structure is typically much less diversified than that of developed countries and often dependent on primary commodities.

Macroeconomic policies might be adopted to affect (decrease / increase) in the nominal interest rate, or volatility of inflation, which has affected the efficiency of housing finance. In differentiating between housing affordability and housing finance affordability, Buckley et al (1994) argued that housing finance affordability arises when inflation makes housing unaffordable at the market rates of interest. Inflation has been a serious obstacle to the development of long term housing finance, it has a unique ability in reducing the purchasing power of savings and make the cash-flow risk of long-term fixed rate mortgages unbearably high (Kim 1997). This resulted in indexation as means of addressing the housing finance affordability problem especially in the Latin America

and few African countries like Ghana. Therefore, the objective of indexation and redesigning mortgage contracts is to eliminate financial constraints that impede the affordability of housing and provide a financing vehicle so that those who can afford to and so desire, can purchase homes (Buckley et al 1993).

In most countries of the emerging markets, the financial regulatory bodies (the Central Bank), have used policies like Cash Reserve Requirement (CRR) and Liquidity Ratio (LR) as instruments of monetary policy and variation of the tax rate as instrument of fiscal policy. CRR is the percentage of the banks total deposit liabilities that are kept in an account with the monetary authorities and LR is the percentage of total assets kept in liquid or near-liquid form that can easily be converted to cash to meet the immediate cash needs of a financial institution. This policy called (CRR) is adopted to control volume of funds available for financial institutions in granting loans to investors. Recently, the Central Banks of both China and India raised the reserve requirement for banks several times in 2008 to mop excess liquidity with the interest rate left unchanged (The Economist 2008b). Also, in Nigeria, the CRR was increased from 3% to 4% in June 2008. This 1% increase, when multiplied with the total deposit liabilities within the banking system has a multiplier effect for credit creation. However, unlike the Central Banks in the developed economies, Central Banks in the emerging economies cannot be considered to be independent and urged by their employers (the government) to hold interest rates so low as to boost growth and jobs.

Apart from the regulatory function of the monetary authorities, there are often times when costs of handling through the market are high and if the net costs are lower, only then may government regulations be relevant (Coase 1960 p.18). It is on this premise that the issue of subsidy in housing finance is being considered in the next section.

#### **4.6 Subsidy in Housing Finance and Establishment of Housing Funds**

In the emerging economies, formal housing finance is operated through both policy-driven housing finance channel and the market-oriented housing finance channel (Deng and Fei 2008). The policy-driven housing finance is mainly through housing funds schemes, which are mandatory housing savings scheme and the market-oriented housing finance is characterised by commercial loans from financial institutions.

Under the policy-driven housing finance, housing funds (Housing Provident Fund – HPF in China, National Housing Fund – NHF in Slovenia and Nigeria) were established by central government to bridge the gap between people's incomes and the price paid for housing. Their initial activity included supporting the construction, renovation and maintenance of housing by offering long-term housing loans on favourable terms to households and non-profit housing organisations (Cirman 2004; Olukayode 2004). Its' lending activities at inception contributed to the demand as well as the supply side of the housing market (Cirman 2004).

On the demand side, it aims to enhance people's housing purchasing power through a system of joint savings-with mandatory contributions from employees and work units – and placement of funds into individual accounts. Home ownership are being encouraged and subsidised by the government on the presumption of its economic benefits to homeowners (Dickerson 2009). The savings in these housing funds accounts allow workers to apply for low-interest housing loans (Buckley et al 1994; Burell 2006). In 1995, the interest rate in real terms for loans granted in Slovenia was 3% in comparison to average banking interest rate of 12.8% (Cirman 2004). On the supply side, attempts have been made to bring down housing construction costs. Low-cost housing project

were planned and implemented with the central government providing policy laws backed by tax exemptions and subsidised allocation of land.

In China, at the 3<sup>rd</sup> National Conference on Housing Reform in China (1993), the state Council's leadership group on Housing Reform issued the decision to deepen the urban housing reform. It requested major cities to set up Housing Provident Funds (HPF) which was the national government's effort to institutionalise the HPF system across China (Lee 2000; Burell 2006 and Wang 2004). In 1995, 35 cities in China had launched the HFP scheme to provide low-cost financing to employees who wanted to purchase public housing (Wong et al 1998; Deng & Fei 2008). To date, (Deng & Fei 2008) noted that most cities in China have established the HPFs system and their establishments marked the beginning of the residential-housing financing system. The sale prices of completed apartments were set lower than open market prices to make them more affordable to households with limited earnings (Wang and Murie 2000; Wang 2001; Rosen and Ross 2000; Burell 2006).

In Slovenia, as at March 1999, the national government have adopted the National Housing Savings Schemes (NHSS) as a tool for promoting long-term savings including premium granting with the main purpose of increasing the supply of affordable long-term housing loans. The National Housing Fund in Slovenia tried to stimulate the supply of non-profit rental housing association, and at the end of the nineties, the loans extended to them had a real interest rate of 1.95 to 2.25 percent with a maturity of 25 years (Cirman 2004). The scheme consists of 5 to 10 year saving contracts with a selected commercial bank, modelled after the Austrian Bansparkassen system. The interest rate for the 5-year contract is  $TOM + 1.65\%$  and  $TOM + 3\%$  for 10 years savings contract - TOM is an interest rate used as a proxy for inflation. It is set by the Bank of Slovenia on the basis of

average inflation in the past three months. Every twelve months, the government grants a “13<sup>th</sup> month amount premium” of 8.33 percent of annual savings on a 5-year contract. A premium of 10.42 percent of annual savings is the entitlement on a 10-year contract savings. At the expiration of the contractual saving, the savers participating in the scheme might obtain housing loan with favourable conditions.

It was the opinions of Wallace (1995) and Kim (1997) that the most efficient but politically unpopular mode of supply-side subsidy is direct capital grant to private developers of rental housing. Since these packages are not producing even rental housing units that are affordable to the poor, it was argued that additional demand-side subsidies were considered necessary to aid the supply of rental apartments to the poor. However, Whitehead (2002) pointed out that it is a matter of attitude to subsidy type, while US commentators believes that demand-side subsidies are more effective than supply-side subsidies, this is contrary to a view accepted in Europe (Galster 1997; Yates & Whitehead 1998; Whitehead 2002).

It is important to point out that any form of subsidy, whether supply-side or demand-side, the issue of accountability and corporate governance has to be tackled in most countries in the emerging world. Due to the poverty level, most government officials having access to government funds cannot effectively account for resources put at their disposal.

In the next section, constraints to mortgage lending in Nigeria as foundation for the theoretical framework of the study is to be discussed.

#### **4.7 Constraints to Mortgage Lending In Nigeria.**

In granting bank facilities to a customer of the bank, there are conditions to be met by the bank customer. These include security, ability to repay, tenor of the lending amongst



other conditions (Mayes 1979; Cranston 2002 and Heffernan 2003). Also financial institutions granting mortgage facilities wishes to maximise mortgage advances, subject to: criteria of security; satisfactory reserve and liquidity ratios and a stable process of expansion (Mayes 1979 and Jones & Maclellannan 1987). In lending by financial institutions, there are two aspects to their lending activities. They are *ability of the financial institutions* to lend determined by the strength of their balance sheet components which includes: equity base, deposit structure / liabilities, reserve ratio's made up of liquidity ratio and cash reserve requirements, level of competition, interest rate on mortgage lending and interest rate on alternative investment outlets etc and the *willingness of the financial institutions* to lend, based on criteria of lending (applicant source of income, loan to income ratio, security/collateral, regulatory requirement, macroeconomic forecast, safety of credit risk assets and target market). Each of these conditions is to be discussed:

***Equity base:*** The equity base is made up of shareholders funds and reserves. Ghosh and Parkin (1972) who presents a complete model of building society behaviour believes that the faster reserves grow, the faster can total assets grow and there is the desire by the Universal banks to accumulate reserves. The bank capital has an important function of reducing risk and affects the liquidity and credit creation ability which indirectly affects the bank's clientele (Hughes et al 1996 & 1997; Hughes and Mester 1998 as cited by Berger 1999; Diamond and Rajan (2000)). The minimum capital requirement specify a minimum capital to asset ratio required to continue being in banking business (Diamond and Rajan 2000; Berger et al 1995 and Kane 1995) and banks aim to keep enough equity capital to meet its overall value at risk (Shin 2009). Berger et al (1995) and Bhattacharya et al (1998) differentiate between banks market capital requirement and regulatory capital requirement.

While banks market capital requirement is the capital ratio that maximises the value of the bank in the absence of regulatory capital requirement, the regulatory capital requirement is the capital standard set by the regulatory monetary authorities like the US\$200 million minimum capital requirement set by the Central Bank of Nigeria (CBN) for all UMDBs operating in Nigeria. Kochi (1988), Betubiza and Leathan (1995) and Basis (2004) and Ajayi (2005) argues the three ways in which bank capital reduces risk. First, it gives the financial institutions ability to absorb losses and remain solvent and competitive. Secondly, it provides ready access to financial markets and thus guards against liquidity problems caused by deposit outflows. Thirdly, its constraints the ability of the financial institutions growth and limits risk taking, as insufficient capital encourages excessive risk-taking (Goodhart 2006).

Renaud (2008), Imala (2005) and Ebong (2005) observes the weak capital base of most banks in Nigeria at US\$200 million, even after re-capitalisation is low compared with smallest bank in Malaysia having capital base of US\$526 million, US\$541 billion for a bank in Germany and US\$688 billion for a single banking group in France. Imala (2005 p.28) further stressed that the aggregate capitalisation of the Nigerian banking system at N311 billion (US\$2.4billion) is grossly low in relation to the size of the Nigerian economy. The small size of most local banks coupled with their high overheads and operating expenses has negative implications for effective intermediation.

***Deposit Structure / Liabilities:*** The ratio of a bank's time and savings deposits to the total deposits represents the proportion of total deposits that are sensitive to interest rate changes. The demand deposit component is free of interest payment, but it is volatile in that this component can be withdrawn on demand and it might not be appropriate to extend long-term loan with deposits of this nature. Kashyap et al (2002) and Flannery

(1994) were of the opinion that banks provides liquidity on both sides of the balance sheet and between lines of credit and demand deposit, there is a synergy in that banks can provide liquidity from both sides. However, Betubiza and Leathan (1995) observe that there is both positive and negative relationship between deposits and loans in general. Positive relationship between deposits and loans, because time and savings deposits enhance the stability of loanable funds and negative relationship in that deposit are more interest rate sensitive and banks may choose to increase investments in interest rate sensitive assets and reduce investments in mortgage lending.

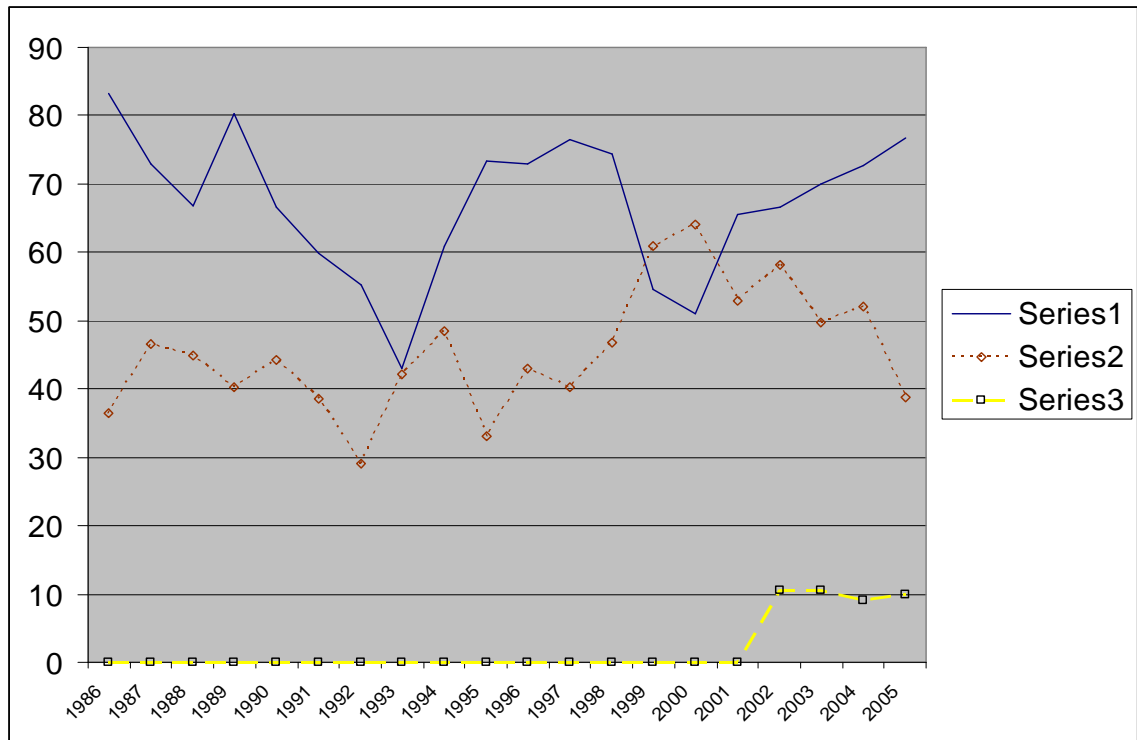
**Reserve Ratio:** The reserve ratios (liquidity ratio and cash reserve ratio) are used as instrument of monetary policy by the Central Banks all over the world and Nigeria is no exception (Sanusi 2002 & 2003; Akinwunmi et al 2007). Clayton et al (1975 pp. 16-17) and Mayes (1979 pp. 40) put succinctly the essence of variation in the liquidity ratio.

*“Broadly speaking the amount of and changes in liquidity ratio are determined by general economic factors. In times of expected crisis, the level tends to rise in order to cope with the harder times ahead. If liquidity then runs down too much when the hard times materialize, some corrective action must be taken and the only way a bank can do this is to raise its interest rates. Conversely, when banks rates are well up to or above average, the money might flood in more quickly than it can be let out. Lending then is stepped up; if the demand is then met (which rarely has been the case in recent times), the rates of interest would be reduced”.*

**Table 4.1: Annual Economic Indicators: Loans to Deposit Ratio, Liquidity Ratio and Cash Reserve Ratio (1986-2005).**

**Source: Nwaoba (2006) p.62**

<b>Year</b>	<b>Loans to Deposit Ratio</b>	<b>Liquidity Ratio</b>	<b>Cash Reserve Ratio</b>
1986	83.2	36.4	n/a
1987	72.9	46.5	n/a
1988	66.9	45	n/a
1989	80.4	40.3	n/a
1990	66.5	44.3	n/a
1991	59.8	38.6	n/a
1992	55.2	29.1	n/a
1993	42.9	42.2	n/a
1994	60.9	48.5	n/a
1995	73.3	33.1	n/a
1996	72.9	43.1	n/a
1997	76.6	40.2	n/a
1998	74.4	46.8	n/a
1999	54.6	61	n/a
2000	51	64.1	n/a
2001	65.6	52.9	n/a
2002	66.5	58.2	10.6
2003	70	49.7	10.5
2004	72.8	52	9.1
2005	76.7	38.7	10



**Fig 4.1: Average Loans to Deposit Ratio (Series 1), Liquidity Ratio (Series 2) & Cash Reserve Ratio (Series 3) (1986-2005)**

From Table 4.1 and Fig 4.1, it shows that the cash reserve ratio application was consistent and moving around 10 percent between years 2002 and 2005, when the data are available. From 1989, when new banks were being licensed and banks increased to 120, due to competition within the banking industry, loans to deposit ratio was 80.4 percent and the average liquidity ratio was 40.3 percent. This translates to the fact that about 80 percent of deposit mobilised were used to grant loans and advances with the liquidity of the banks not taken into consideration until it got to the minimum level of 29.1 percent in 1992.

From the graph, Figure 4.1, the worst liquidity ratio for the financial institutions was in 1992 at 29.1 percent and the valley point of loans to deposit ratio was 42.9 percent in 1993. In 1995, the liquidity ratio was 33.1 percent and with the announcement that the military government would be handing over to a democratically elected government in

1999, politicians started bringing money into the system and financial institutions started lending up till 1998. Between 1995 and 1998, the ratio of loans to deposit was over 70 percent, meaning that over 70 percent of the deposit were been locked up in loans and advances while the liquidity within financial system was in jeopardy.

From the graph, it could be deduced that loan to deposit ratio is inversely related to liquidity ratio. Anytime the financial authorities adopt a policy of increasing the liquidity ratio, the loan to deposit ratio gradually reduces, though with a time lag, which aligns with the postulation of Clayton et al (1975) and Mayes (1979).

**Level of Competition:** The competition faced by a financial institution may affect its investment decisions especially if it is a specialised lender. A competition index could be computed based on the individual bank's assets and total assets of the financial institutions operating in Nigeria. The proxy for competition faced by a bank is computed:

$$CompetitionIndex_j = 1 - \frac{BankAssets}{TotalBankAsset}$$

Where the competition index (COMPETITION) measures the amount of competition faced by  $j^{th}$  bank in its market environment, while 0 denotes lack of competition and 1 denotes maximum competition; bank assets refer to the total assets of the  $j^{th}$  bank (Betubiza and Leatham 1995); and total assets refer to all the combined assets of financial institutions existing in Nigeria.

**Interest Rates:** Since interest rate is considered as the rate of return on investment, when the rate of interest is low on mortgage lending maybe due to government regulations, there is the tendency for the financial institutions to look for an alternative investment outlet in order to make good profit.

Apart from the ability of the financial institutions to lend, the other aspect is the willingness of the financial institutions to lend towards mortgage acquisition. The factors considered by them include criteria of security, income, price of the property, price of alternative goods and services and household characteristics (age, marital status etc).

**Criteria of Security:** With a favourable reserve and liquidity position, financial institutions in Nigeria do not necessarily lend to all applicants that approach them for banking facilities, even if the prevailing interest rate is acceptable to the borrower. Loans are secured on specific property and necessary steps are taken in avoiding default on repayment or depreciation of the security below the book value of the debt. There are various ways by which the lenders determine the ability of the borrower to repay and the suitability of the property as security. However, since the mortgage loan tenor is short in Nigeria between two and ten years, the idea of reducing repayment period in minimising risk as suggested in Jones and MacLennan (1987) might not be feasible.

**Income:** The income being earned by a borrower determines the ability to repay the money borrowed. The total sum advanced therefore is usually restricted to some multiple of two to three times the applicant's salary (Mayes 1979; Cranston 2002). This means that the applicant shall have secure prospects of a continuing income. However, in the recent past in the developed economies, it is considered that average home prices range from three to four times of annual income (Ball 2003; Warnock & Warnock 2008).

In the emerging economies, because wages are low and construction cost is high, average home prices are usually about eight times of annual income and to make it affordable, repayments have to be spread over a very long period of time. The point is already made that as at now, mortgage loan tenor is short in Nigeria between two and ten years. Windapo and Iyagba (2007) concluded in their study that a positive relationship exists

between housing construction cost and building materials price, property price, foreign exchange rates because imported building materials are used for construction, labour cost and national disposable income.

***Marital Status:*** If a borrower is asking for mortgage financing as a single person, the income of an individual would be considered. If the application is made by a married couple, the earnings of the wife are usually given a considerably reduced weight in determining the overall sum to be lent.

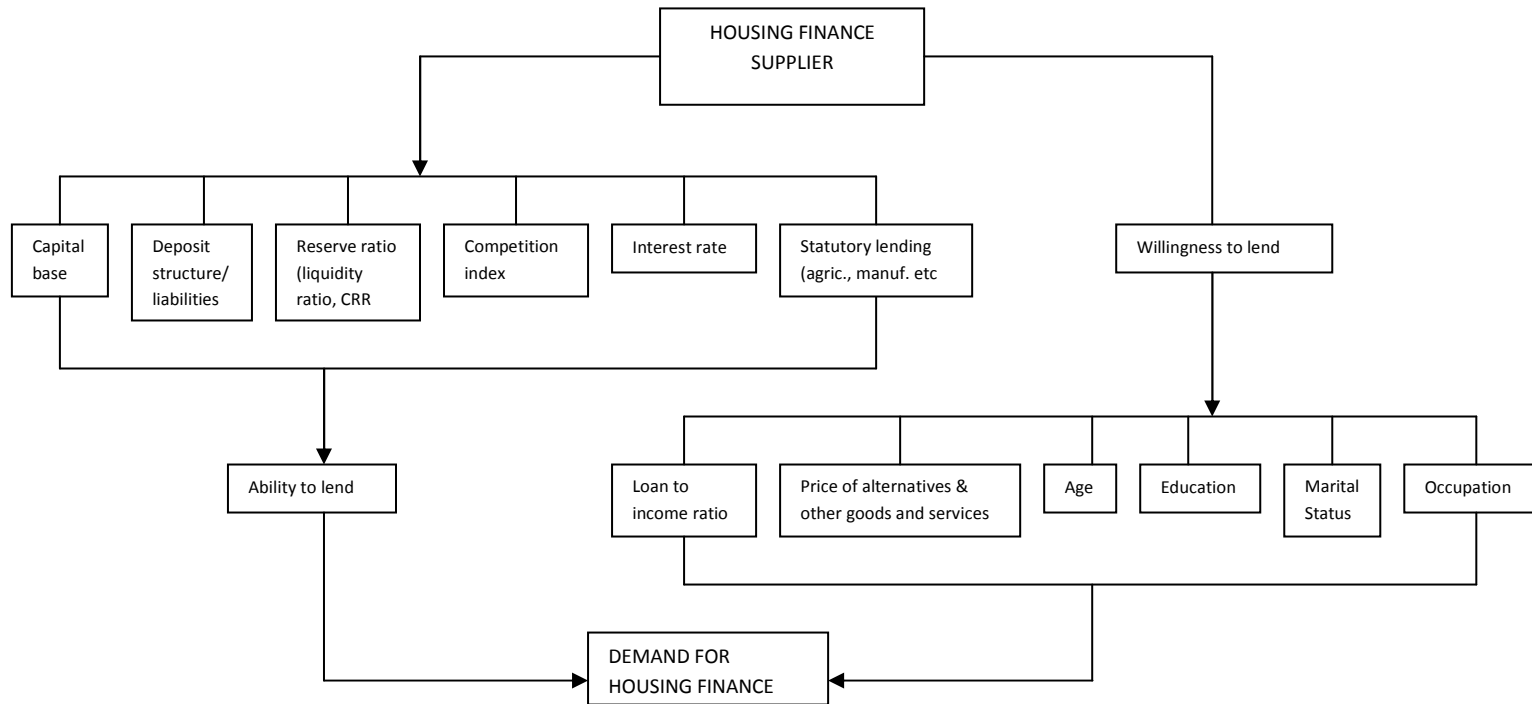
***Loan to Income Ratio:*** Financial Institutions would like to know what percentage of his total income is already committed to payment of all. In some cases, bank might not lend to individuals that would commit more than 40 percent of his income on settling debts.

***Control of lending:*** In some cases, control of lending is also exercised by avoiding advances on the security of properties which might deteriorate. Financial institutions prefer lending on properties which are relatively modern and also prefer houses to flats. As a property is becoming old-fashioned, the less is the willingness of financial institutions to lend based on the collateral of the property. This policy affects the distribution of house prices, since it would be difficult to raise a loan on a particular property.

As a result of these constraints demand is always rationed and it is difficult to assess what the real demand for mortgage is while the supply constraints in the form of the reserve and liquidity ratios are easier to observe.



Fig 4.2 THEORETICAL FRAMEWORK FOR SUPPLY OF HOUSING FINANCE



#### **4.8 Theoretical Framework and Model**

A model is a construct or diagram which explains the underpinnings of a theory base and Daresh and Playko (1995) describe a model as interrelationships of variables or factors in a theoretical statement depicted graphically. Also, a model is a description used to show complex relationships in an easy-to-understand term (Stoner, Freeman and Gilbert 1995; Lunenburg and Irby 2008). From another perspective, models functions within theoretical and conceptual frameworks to compress data into more effective or holistic formats, which make it possible to relate complex elements like housing to culture, behaviour, economic development etc (Rapoport 2000; Ronald 2007 p. 475). However, macroeconomic models are systems of equations that determine current outcomes given the values of the current policy actions, values of predetermined variables and values of any stochastic shocks (Prescott 2006).

Hancock and Wilcox (1993 & 1994) posited that individual bank's desire of holding assets in any given category depends on several factors coupled with its preference for risk and return; its perception of risks; the risks of, returns on, and other characteristics of alternative assets and liabilities available to it; its long-term customer relationships and the cost of lending. The relationship is approximated by a function that a linear in parameter but may include non-linear transformations of variables:

$$A_i = f( X_1 + .....+X_m)$$

Where  $i = 1$  to  $m$

The exogenous characteristics of the liability and capital markets for a bank can also affect its long-term asset position (Hancock and Wilcox 1993 & 1994). These characteristics are so important because liabilities and even capital are in different forms. In the case study country – Nigeria, for instance, the tenor of the deposit liabilities which

is averagely about 50 percent on demand for each bank contribute immensely to the inability of these institutions from granting long-term lending. Due to short-term nature of their deposit liabilities according to commercial bank loan theory, they tend to lend short rather than lending towards housing or for financing plant and machinery because they are considered as illiquid (Elliot 1984; Ritter & Silber 1986 as cited by Soyibo 1996). Furthermore, Brainard and Tobin (1968) observe that time and saving deposits are less volatile than demand deposit and they may be adventurously invested. Again, when banks are risk-averse, there is the tendency for it to hold assets which have low default rate and earn less income. Studies have found that bank managers act in a risk-averse way by trading off between risk and expected return which might result in keeping additional costs expended to keep risk under control (Hughes et al 1996 & 1997; Hughes & Mester 1998).

As earlier discussed in Chapter 2, debt finance for housing is usually tenured facilities. Term-loans vary from short-term through to long-term, which might have tenure of between 10 to 30 years (Cranston 2002; Hefferman 2003). When bank facilities is about to be granted to customers, there are conditions to be met by the bank customer. These include provision of security in excess of the amount to be borrowed, ability to repay – the borrower is expected to have a source of income and tenure of the borrowing amongst other conditions (Mayes 1979; Cranston 2002 and Heffernan 2003). The financial intermediaries providing mortgage facilities also wish to maximise mortgage advances subject to satisfactory reserve and liquidity ratios.

In lending by financial institutions, there are two aspects to their lending operations. The ability of the financial institutions to lend determined by the strength of their balance sheet. The theoretical framework is presented in Figure 4.2. It is the liability side of their

balance that determines the ability of the financial intermediaries to provide long-term funding for housing finance in Nigeria. The tenor of the deposit liabilities, which is averagely about 50 percent demand for each bank (see Appendix V), has contributed immensely to the inability of these institutions from granting long-term lending.

The financial institutions had unique characteristics of bringing together the surplus units and deficit units for entrepreneur activities. Therefore, the willingness of the financial institutions to lend as risk managers depends on very strict conditions. It is only customers that could meet up with their conditions that can access finance for house acquisition. The mortgage instruments used in the developed economy are more sophisticated than what is applicable in most of the emerging economies. However, the banking principles remain the same.

In the next section, discussion is centred on demand and supply sides of housing finance in Nigeria.

#### **4.8.1 Demand and Supply Sides of Housing Finance**

In lending, financial institutions give out loans in consideration of interest to be charged on the loans and the riskiness of the loan (Stiglitz and Weiss 1981; Cho 2007). The demand and supply of housing finance are determined by various factors. The ability of financial institutions to lend for housing (supply of housing finance) determines the quantity of housing finance that could be supplied for house acquisitions. If the identified factors which are components of the liability side of the balance sheets are dwindling, the availability of housing finance will be reduced. Ghosh and Parkin (1972) who present a complete model of building society behaviour believes that the faster reserves grow, the faster can total assets grow and the desire is there for the Universal banks to accumulate

reserves. If the reserve is accumulating, therefore the capital base of the banks would be growing and the ability to lend will be there to make more profit.

Ikhide & Alawode (2001) Rojas-Suarez (2002), Hefernan (2003) and Buckle & Thompson (2005) identified indicators of bank strength which are summarised with five key variables namely capital adequacy; asset quality; management quality; earnings' performance and liquidity with the synonym- CAMEL system. Capital adequacy, asset quality and liquidity are considered to be the three most important indicators with capital adequacy being the core ratio used by bank supervisors. Apart from being the financial indicators used by credit rating agencies in the emerging markets, it is noted in Moody's (1999) that "the strength of capital and provisions is a more important element in the analysis of emerging market banks than is the case with banks in developed markets".

It is generally known that capital adequacy rules impact on the bank behaviour (Dewatripont and Tirole 1994; Freixas and Rochet 1997; Chiuri et al 2002). There are two ways by which these rules affect bank behaviours. Firstly, capital adequacy rules strengthen bank capital and it improves the resilience of banks to negative shocks and secondly, capital adequacy affect banks in their risk taking behaviours. Kochi (1988), Betubiza and Leathan (1995) and Basis (2004) argued that banks with good capital base have the capacity to absorb risk. These types of risk could be liquidity, mismatch, systemic or credit risk. Berger et al (1995) differentiates between banks market capital requirement, which are capital ratio that maximises the value of the bank and the regulatory capital requirement, which is US\$200 million minimum capital requirements for all Universal Banks operating in Nigeria as set by the Central Bank of Nigeria (CBN). For instance, any surge in deposit outflow can create an immediate liquidity problem for an institution. Betubiza and Leathan (1995) are of the opinion that there are positive and

negative relationships between deposits and loans generally. What is relevant to this argument is the positive relationship. Therefore, the positive relationship between deposits and loans is that time and savings deposits enhance the stability of loanable funds. In Nigeria, one of the problems with the lending abilities of the banks is that over 50 percent of their deposit liabilities are demand deposits, which are not supposed to be lent out on long-term basis to avoid mismatch risk (Appendix V).

As argued earlier on that financial institutions with good capital base could withstand risk, apart from mismatch risk, another form of risk is the systemic risk. As argued by Berger et al (1995), when there are news that some banks are unable to meet their immediate financial obligations, this sort of information might create problems and destructive panic (Guttentag and Herring 1987; Allen and Gale 2000, as cited by Yorulmazer 2009) observed that interbank markets may even be another channel through which problems of one bank might be transmitted to another bank.

On the demand side of housing finance, the most important factor being considered by banks is the ability of the borrower to repay the money borrowed. This can be secure, if the borrower is in employment at the point of borrowing. Considering the macroeconomic situations in the emerging economies and in particular Nigeria, there is no way anybody can predict how long a borrower would be in employment. In developed economies, total sum borrowed is usually restricted to three to four times the applicant's salary (Ball 2003; Warnock & Warnock 2008).

While marital status is of importance in the developed economies, in the case study country – Nigeria, an applicant is mostly considered as an individual and the wife's income does not carry any weight. The other factors considered are the age and the loan to income ratio etc.

To have insight into the demand and supply sides of housing finance, questionnaires were distributed to both suppliers and users of housing finance in Nigeria. The responses from them serves as data input for the model incorporating both demand and supply of housing finance in Nigeria.

#### **4.8.2 Dependent Variable**

The dependent variable, housing finance supply is measured by the volume of housing loan extended by the UMDBs within the Nigerian context.

#### **4.8.3 Independent Variables (Supply Side)**

The equity base is the most important form of funding for a business because it is internally generated by the business owners and does not attract any form of cost. Unlike borrowing, which attracts interest payments on monthly, quarterly or annual basis as the case may be, it is interest free. The equity base is made up of capital and reserves.

When a business is about to commence, **capital** is raised from investors either through public offering or through private placements. Capital are mostly called equity because the holders always has the right to liquidate or referred to as long-term debt where the right of liquidation accrues to holders only when there is default (Edwards and Fischer 1994; Diamond and Rajan 2000). Berger et al (1995) considers equity capital as the residual claim on a bank, that is, the value of obligations of others to be paid to the bank plus the value of any other tangible and intangible assets less the value of obligations to be paid by the bank. It is part of the capital that is used to acquire assets for the business to start operation in earnest after the necessary approval has been sought and obtained from the authorities. As the business grows and profits are made, part of the profit is being retained as a source of finance for expansion. In Nigeria, there is a statutory

regulation that if a publicly quoted company makes a profit in a financial year, a certain percentage of the profit after tax should be retained in the business in form of reserve. Ghosh and Parkin (1972) noted the faster reserves grow, the faster can total assets grow and there is the desire by the Universal Banks (UMDBs) to accumulate reserves.

Another important independent variable is the **deposit liabilities** of the UMDBs. The deposit liabilities are like the working capital for the banks and there is always intense competition in mobilising deposits by the UMDBs. Usually, in an effort to have an edge on other competitors, these UMDBs use different types of strategies to woo customers like payment of high interest rates on deposit. The ratio of a bank's time and savings deposits to total deposits represents the proportion of total deposits that are sensitive to interest rate changes. While the demand deposit component is free of interest payment, it is volatile in that withdrawals could be made on demand without notice. Therefore, it is not appropriate to extend long-term loan with deposits of this nature. Time and saving deposits enhances the positive relationships between deposits and loans (Betubiza and Leathan 1995) and from individual banker's viewpoint, they are less volatile than demand deposit meaning that time and savings deposits can be adventurously invested (Brainard and Tobin 1968).

**Other liabilities** are considered as outstanding financial obligations that are not yet due. These are made up of outstanding tax liabilities or deferred taxation, dividend payables, financial instruments issued but not due for payment and borrowings from economic agencies like European Investment Bank (EIB), International Finance Corporation (IFC) and World Bank. Due to the long nature of these liabilities, they are suitable for housing finance purposes. Many of the Nigerian UMDBs are using facilities from IFC to fund



housing finance with the assets matched against the liability to avoid capital and mismatch risks.

**Loans to Manufacturing, Loans to Commerce and Loans to Agriculture** are considered as independent variables. When UMDBs are having deposit liabilities, on which interest are paid, they source for investment outlets which would yield income. The deposit liabilities, depending on their tenures are given out as loans and advances. Therefore, the UMDBs have the alternatives of either lending it out for housing acquisition, manufacturing, commercial or agricultural purpose.

**Total Investment** as independent variable reflects in the balance sheets of UMDBs as funds invested in tradeable securities like company shares and stocks, government securities and bonds. These government securities are made up of treasury bills with maturity tenor of 90 days and treasury certificates with tenor of between one to two years. The government securities are sold by the Central Bank of Nigeria (CBN), through Open Market Operations (OMO) which is a major tool for liquidity management. The government securities are sold to mop up excess liquidity in the economy and at times to raise short-term fund for government. The UMDBs can even buy government securities through the discount window at the CBN to meet up with their liquidity ratio calculations. In an effort to revive the economy, the CBN reduced the liquidity ratio from 40 percent to 30 percent in late September (Subair and Omankhanlen 2008). The purchases are undertaken through the standing lending and deposit facilities introduced in December 2006 to replace repurchase agreement as complement to other liquidity management instruments.

Again, both the Federal Government of Nigeria (FGN) and the state governments are now selling bonds to finance infrastructural and other long-term projects. In January

2009, the Lagos State Government is raising N275 billion through bond sales to finance infrastructural developments and in June 2008, the FGN raised N47.2 billion for housing finance (Onyebuchi 2008). These investments in bonds are considered as liquid assets in the calculation of liquidity ratio and actively traded at the Nigerian Stock Exchange (NSE) (CBN 2007).

**Cash Reserve Requirement (CRR)** like liquidity ratio is used as instrument of monetary policy. As instrument of monetary policy, the reduction in reserve requirement allows the monetary authorities to expand money supply and lower interest rates and improve the safety and soundness of the depository institutions (Hein and Stewart 2002). As argued by Pilbeam (2005 p.437), since financial institutions have liquid liabilities (deposits) and relatively illiquid assets (loans) it is mandatory to have regulations that ensures unnecessary problems does not arise due to insufficient liquidity to meet depositor's cash demands.

The cash reserve ratio is calculated by setting aside a fixed percentage, now three percent, of the total deposit liabilities of a UMDB and kept in an account with the CBN attracting minimal of interest rate. However, whenever these financial institutions encounter cash shortages, they can borrow from the CBN at penal rate of interest (in Nigeria - it is at the MRR, in the US – it is at the Federal Funds Rate and in the UK – it is the Base Rate). The bank's total deposit liabilities are defined as the demand, savings and time deposits of both private and public entities, certificates of deposits and promissory notes held by non-bank public and other deposit items (NDIC 2005). This deduction reduces the ability of these banks to grant loans and advances, it is therefore one of the independent variables that is being adopted for the model.

However in a bid to revive the economy, the CBN announced in late September 2008 reduced the CRR from four percent to two percent (Subair and Omankhanlen 2008).

**Fixed Assets** also is considered an important independent variable. As mentioned earlier on, there is a correlation between the capital and the amount spent on fixed assets. So also, when a banking business commences, after the acquisition of fixed assets, lending is considered as the next assets to be considered. Therefore, there is correlation between fixed assets and loans to housing.

**Total Loans and Advances** is another of the independent variable. If a UMDB gives out one thousand naira as total loans and advances for a financial year, the amount to be allocated to loans to housing is derived from the total loans and advances. Therefore, there is correlation between total loans and advances and loans to housing.

**Total Bank Assets** is the last independent variable being considered. As the loans to housing are increasing when the resources are there, so also is the total bank assets increasing. Like the other two independent variables (Fixed assets; total loans and advances), there is correlation between total bank assets and loans to housing.

Having described the twelve independent variables for the model, the testing will be done in Chapter Nine.

#### **4.9 Summary**

The neoclassical economic theory was developed to predict the general patterns of economic behaviour (Merton & Bodie 1995; Ryan et al 2002). It cannot be used to predict individual economic behaviour except the general trends in aggregate economic phenomena, one of which is the supply of credit and in particular housing finance supply.

The operations of the financial intermediaries in the emerging economies had revolved around the traditional theory of financial intermediation where the financial intermediation tool was considered to be revolving around asymmetric information; regulatory framework and transaction costs. However, in the developed economies, much emphasis on the modern theory has been on risk management with the components of traditional theory kept at the background. With the recent happenings, the components of traditional theory which includes regulation of the financial intermediaries, kept at the background had to be revitalised.

The shortcomings identified in the subprime mortgage lending in the United States and the funding of mortgage lending in the United Kingdom shows that the developed economies are not perfect in regulatory framework designs. This lack of adequate regulation has resulted in lending behaviour of financial intermediaries and in particular, the mortgage lending practices becoming complex and non-rational in nature. Importantly, a system of free banking and deregulation need to be re-assessed and re-regulated, this might involve the operations of the investment banks and the hedge funds controlling about \$55 trillion market for credit derivatives, which all along has been treated as off-balance sheet transactions, to be brought into the regulatory orbit.

World Bank (2007) argues that there has been advancement in risk management by financial institutions and corporations in many of the emerging market economies due to the adoption of international frameworks like Basel I and II Accords. However, the capacity to develop enterprise-wide risk management framework is lacking due to the underdeveloped derivative markets, which has hampered the effective measurements of aggregate risk and eventual underestimation of credit risk.

Furthermore, macroeconomic problems have been overwhelming so that effective financial intermediation has been a mirage. The cost of accessing information is high and the percentage of the population that can afford the transaction cost involved in financial intermediation is low. Most sovereign governments in their wisdom believe that the provision of a subsidised interest rate is the solution to the provision of housing. This can only be a temporary solution rather than a permanent solution.

## **CHAPTER FIVE**

### **HOUSING FINANCE SUPPLY IN NIGERIA**

#### **5.1 Introduction**

Nigeria is one of the most urbanised in the African continent with an estimated population of about 150 million. Housing is a basic human need in every society and is regarded as a fundamental right of every individual (United Nations 1976).

Housing is regarded as a system made up of shelter and the supporting basic infrastructures required by man and it is capital intensive. The importance attached to the provision of housing has led successive administrations to be adopting policies that would increase its availability. The policies ranged from direct construction of dwelling units to legislating framework for providing financing to prospective owners, the outcomes of which has not been encouraging (Arilesere 1997; Abiodun 2000 and Bala et al 2007).

The chapter intends to appraise the various efforts made by government in providing finance for acquisition of homes by individuals. To achieve these objectives, the chapter is divided into seven sections. The first is the introduction, the second section examines housing sector in Nigeria, the third section discusses housing finance supply in Nigeria and the fourth section looks into Housing Finance Institutions in Nigeria. The fifth section examines the establishment of National Housing Fund while section six examines constraints to lending in Nigeria. The final section of the chapter is the summary.

#### **5.2 The Housing Sector in Nigeria.**

Nigeria has the largest urban population of any sub-Saharan African (SSA) country and the conservative estimates of Nigeria's urban population show that it exceeds the total population of all but South Africa and Ethiopia (Buckley et al 1994; The Economist

2008a). The urban population growth is between 6 and 8 percent per year in major cities such as Lagos and Ibadan, with a quality of life index of 41.8 to New York at 100 (The Economist 2008a). Presently, the housing deficit stands at 14 to 17 million; up from the 8 million that was identified in the 1980s and 13.64 million estimated by Ajakaiye and Fatokun (2000) for the 2000-2005 period. Over 72 million Nigerians are either homeless or live in rented substandard homes in areas best described as slums (Omirin and Nubi 2007).

As discussed in Chapter 2, the basic human need for shelter defines the problem in terms of quantity and quality. The situation in Nigeria is about whether they are available. They are not available, in quantity and therefore the quality issue is secondary. While the population is increasing, investment in the housing sector by the government has been less than 3 percent of the annual budget (Sanusi 2003) and the financial institutions are not willingly lending to housing. This is incomparable to situation in other emerging economy like Korea and Thailand with housing loan to GDP of 14 percent and 18 percent (Saravanan 2007).

Housing problems result from a complex interdependency of elements such as material, social, political and economic with interaction and activities in other sectors of the economy (Okunsanya 1994; Soyingbe et al 2007). However, Shittu (1995), Agboola and Olatubara (2003), Windapo (2005) and Nubi (2005) identified the factors militating against housing provision in Nigeria to include: difficulty in land acquisition, lack of housing finance, high cost of building materials, problems on existing land policy, poor infrastructure (both physical and financial infrastructures) among others.

In most government circles, difficulty in land acquisition has been considered as the greatest factor militating against housing provision. However, Nubi (2005) and Abdulai (2007) have argued that housing finance is the most important factor in that people in the

rural areas acquires traditional land and build on those lands. The construction might take a longer period to complete because finance is not available. About 90% or more of total housing provision has traditionally being provided by the private sector (FRN 1992; Buckley 1994 and Ajanlekoko 2001). However, Egbu (2007) noted that 54 percent of residential accommodation is being provided by individual private property developers, 22.7 percent provided by corporate developers and 22.3 percent of residential accommodation is provided by government developers. In Nigeria, public housing production agency is having their presence in both the Federal and State governments domain but the informal sector has been active than the government agencies (Sanusi 2003; Nubi 2005 and Nubi 2008).

Between 1986 and 1990, the average level of investment in housing was 1.7% of GDP, which almost halved the 3.3% share achieved in the preceding decade, and has secularly declined from over 3.6% of GDP in 1980s to 1.5% in 1990 (FOS 1991; Buckley et al 1994 and Ajanlekoko 2001). Furthermore, Ozili (2009) argues that in the 1995 and 1996 budget, there was no budgetary provision for housing development by the federal government. The exact cause of the decline in housing investment over this period cannot be stated. It is presumed that most of the building materials are imported and with the devaluation of the nation's currency (NAIRA) in 1986 contributed to the decline of housing investment. This is typical of problem in SSA where macroeconomic volatility is ranked high in the housing finance problem of emerging markets.

In order to solve the problem of land acquisition for housing provision in Nigeria, the Federal Government promulgated Land Use Decree of 1978 to effectively nationalise land without paying compensation to traditional owners. The decree requires state governor to authorise every land transaction, which slow down transactions considerably and expose



officials to corrupt practices. These problems as highlighted by Mabogunje (2002) and Iwarere & Megbolugbe (2008) compounded issues of land acquisition and the processing of land registration might take up to 12 months, which results in delay to access housing finance. This is due to the fact that in accessing housing loan, a potential borrower is supposed to have a good title to a piece of land which is conveyed by the certificate of occupancy. Therefore, the issue of housing finance supply is will now discussed in the next section.

### **5.3 Housing Finance Supply in Nigeria**

The sources of housing finance supply can be broadly classified into formal and informal.

As discussed in sections 3.4 and 4.7, formal housing finance supply in emerging economies are operated through both policy-driven and the market-oriented housing finance channels (Deng & Fei 2008). The policy-driven housing finance supply is mainly through housing funds schemes which are mandatory housing savings scheme while the market-oriented housing finance supply is mainly commercial loans from financial institutions.

For the acquisition or building of a house, Nubi (2005) and (2006) noted that the most popular means of raising finance in Nigeria has either been from financial institutions, which are universal banks, mortgage institutions, insurance companies and state housing corporations or from the informal financial markets. The informal sector provides shelter for over 85 percent of the population in the countries of sub-Saharan Africa (UNCHS, 1996 & 2000; Durand-Lasserve 1997; Omirin & Antwi 2004). The type of finance being raised from the financial institutions is called debt financing and it represents less than 25 percent of total housing finance lending figure outstanding within the financial system (Nubi 2005; Nubi 2006). This is due to the fact that over 80 percent of the potential

borrowers earn low income and cannot meet the conditions attached to borrowing for housing finance by the lenders.

Therefore, 70 to 80 percent of housing finance in emerging economies is raised from the informal markets (Okpala 1994; Buckley et al 1994; Saravanan 2007 and Tiwari & Debata 2008).

### ***5.3.1 Informal Housing Finance Supply in Nigeria***

Joireman (2000), Antwi (2002) and Omirin & Antwi (2004) consider informality as a characteristics related to activities that are unofficial, unregulated, customary or traditional but are not necessarily illegal. The concept of informality is considered by Durand-Lasserve and Tribillion (2001) as “abnormality” or “irregularity” while Loayza et al (2009) views informality as fundamental characteristic of underdevelopment and arises when the cost of belonging to a country’s legal and regulatory framework exceed its benefits. The argument goes further that informality as related to land market activities does not conform to laid down procedures but not necessarily illegal.

However, informal markets are defined by Montiel et al (1993) and Soyibo (1995) as institutions with its rule governing buying and selling of goods and services as a forum of organised exchange but their operations are outside the purview of the central government macro-economic policies and without any legal back-up. Lundberg (1979), Cheng (1986), Fry (1988), Wade (1990) and Levenson & Besley (1996) argue that the growth of the informal financial system in the emerging economies occurred in the shadow of the formal financial system that is widely viewed as being underdeveloped.

Due to the stringent conditions attached to borrowing from banks in Nigeria, most households especially low-income earners do not have access to housing finance (Olufemi

1993; Onibokun 1985; Nubi 2006 and Omirin & Nubi 2007). Therefore, individual homebuilders sought finance from informal sources such *ajo* (traditional thrift societies) or *esusu* (rotating savings and loan association), age/trade groups, traditional moneylenders, friends and family (Omirin and Nubi 2007). They were all classified as micro-credit organisations and their operations were convenient and accessible (Nubi 2006 and Omirin & Nubi 2007). They operate on the basis of third party guarantees and also relied on peer pressure to ensure prompt repayment. Also, they are unsecured and lacked the magnitude of accumulation of funds required for large investment outlays.

### ***5.3.2 Formal Housing Finance Supply in Nigeria***

The formal private sector institutions like commercial banks (called UMDBs in Nigeria) and insurance companies with widened financial services provision outlets can adequately tackled issue of long-term financing (Soyibo 1996; DFID 2004). The micro-finance institutions (MFIs) are classified as semi-formal financial institutions but they do not have worthwhile resources to contribute to long-term lending. Even for poverty alleviation purposes, they reach less than 2 percent of the population in most countries except Bangladesh with MFIs providing over 13 percent (DFID 2004; Honohan 2004)

The formal housing finance supply outlets in Nigeria comprises of the following types of institutions:

- Federal Mortgage Bank of Nigeria (FMBN)
- Universal Money Deposit Banks (UMDBs)
- Insurance Companies
- Primary Mortgage Institutions (PMIs)

While the PMIs are licensed by FMBN, all the financial institutions operating in Nigeria file returns to the Central Bank of Nigeria on monthly basis. The activities and contributions of these institutions to housing finance supply is discussed in section 5.4

The housing finance situation in Nigeria exactly depicts the observation made by Renaud (1984) that there are familiar and important limitations to the income qualification required from potential borrowers: an adequate level of income, regular stable employment, a verifiable income and collateral in the form of conventional marketable assets. In some cases, borrowers are intimidated with the minimum amount the financial institutions are willing to lend because they do not want to deal with low- income earners. In the next section, we examine the institutions that are involved in housing finance supply in Nigeria.

#### **5.4 Housing Finance Institutions in Nigeria.**

The first conscious effort made in Nigeria for housing finance was in 1956 when the Colonial Development Corporation (CDC) in conjunction with the Nigerian Federal Government and the Eastern Nigeria Government formed the Nigeria Building Society Limited (NBS) with a capital of N2.25 million for the purpose of lending money for house ownership (Ojo 1983).

As at December 2007, the Nigerian financial system comprised of the Central Bank of Nigeria (CBN), the Nigerian Deposit Insurance Corporation (NDIC), the Securities and Exchange Commission (SEC), the National Insurance Commission (NAICOM), the National Pension Commission (PENCOM), 24 universal deposit money banks (DMBs), 5 discount houses (DHs), 77 insurance companies, 93 primary mortgage institutions (PMIs), 709 microfinance banks (MFBs), 112 finance companies (FCs), 1 stock exchange, 1 commodity exchange, 5 development finance institutions and 703 bureaux-de-change (BDCs) (CBN 2007).

Out of the above listed financial institutions that make up the Nigeria financial market, only four of them are directly involved in housing finance supply. They are:

- The Federal Mortgage Bank of Nigeria (a development finance institution)
- universal deposit money banks
- insurance companies
- primary mortgage institutions (PMIs)

#### **5.4.1 Federal Mortgage Bank of Nigeria (FMBN)**

The development financial institutions were made up of the Nigerian Export-Import Bank (NEXIM), the Bank for Industry (BOI), the Nigerian Agricultural, Co-operative and Rural Development Bank (NACRDB) and the Federal Mortgage Bank of Nigeria (FMBN). FMBN started as a housing finance institution with the establishment of Lagos Executive Development Board (LEDB) in 1928; Nigeria Building Society (NBS) in 1956; formation of State Housing Corporations between 1956 and 1960; National Council of Housing 1971 (Nubi 2005). Following the promulgation of the FMBN Decree No 7 of January 1977 as a direct federal government intervention to accelerate its housing delivery programme, it commenced operation in 1978 to expand and coordinate mortgage lending on a nationwide basis with a paid-up capital of N20 million which was increased to N150 million in 1979. By mid-1980s, the FMBN was the only mortgage institution in Nigeria.

As a fall-out of housing reforms which started in 2002, the FMBN is now reorganised to perform mainly secondary mortgage and capital market operations. It is presumed that the withdrawal of FMBN from the primary loan market is to free up financial resources on the part of government for other uses and serve the populace according to the dictates of the housing market. This is in line with the housing reforms going on in the Asian-Pacific

Region, where the Government Housing Loan Company (GHLC) of Japan, withdrew from the primary loan market (Ronald 2007). The Ownership / Shareholding Structure of the authorised share capital of 5 billion Naira (\$42.5million) is Federal Government of Nigeria (FGN) – 50 percent; Central Bank of Nigeria (CBN) -30 percent and Nigeria Social Insurance Trust Fund – 20%.

#### **5.4.2 Universal Money Deposit Banks (UMDBs)**

The Universal banking practice was adopted in Nigeria in 2001 through CBN Circular titled “Guidelines on Universal Banking”. This removed the regulatory barrier between merchant and commercial banking institutions which resulted in the usage of Universal Money Deposit Banks for all financial institutions.

The UMDBs attract the greatest attention and are effectively monitored in terms of supervision (Sobodu and Akiode 1998). This might be presumed to the fact that these conventional banks hold the bulk of financial system deposits, provide the most appropriate channel through which monetary policy can be effectively conducted, co-ordinated, monitored and assessed and serve as bankers to other financial institutions (Anderson et al 2009; Megginson 2005b; Sobodu and Akiode 1998).

The financing of the economy by the banks, measured by the ratio of banking system credit to the core private sector (CP) to GDP increased from 13.5 percent as at December 2006 to 21.7 percent in December 2007 (CBN 2007). It is presumed that the introduction of the use of electronic and other forms of payments, particularly ATMs and other card products had a positive effect on the intermediation ratio of currency outside banks to broad money supply, which declined from 18.8 percent as at December 2006 to 15.2 percent as at December 2007. The depth of the financial sector, having one of its measurement

indicators as the ratio of  $M_2$  to GDP ratio increased from 19.8 percent as at December 2006 to 21.1 percent as at December 2007.

The reform policies introduced in the early 1980s made up of financial sector liberalisation and banking system deregulation in particular tend to effectively allocate the scarce financial resources for efficient and productive utilisation (Soyibo 1997; Wade et al 2001). As highlighted by McDonald and Schumacher (2007), financial sector reforms includes liberalising interest rates, phasing out directed credit, adopting indirect instruments of monetary policy, re-structuring of banks and improving banking supervision. The de-regulation of the financial services sector in the last quarter of 1986 has contributed significantly to the growth witnessed within the Nigerian banking system in the last decade (Ebong 2005; Ezeoha 2007). The number of banks increased by about 154.8 percent from 42 in 1986 to 107 in 1990. It further increased by about 12 percent to 120 by 1992 (Soyibo 1997; Ezeoha 2007). Due to the liquidation of some banks as a result of non-performance, the number reduced to 89 in 2004 and due to merger and acquisition of weak banks in 2004/2005 (see Table 5.1), the number of the Universal Deposit Money Banks (UDMBs) in the system reduced to twenty- four by December 2007 (see Table 5.2)

To effectively carry out the de-regulation of the financial sector, two new decrees were introduced in 1991. The CBN Decree No 24 of 1991 and the Banks and Other Financial Institutions Decree (BOFID) No 25 of 1991, which repealed the CBN Act 1958 (as amended) and the Banking Decree 1969 (as amended) respectively. The new CBN Decree enlarged the powers of the CBN in regard to the maintenance of monetary stability and a sound financial system. In enlarging the powers of the CBN, UDMBs are expected to seek approval from the CBN of new branches being opened so that the branches of these banks are not concentrated in the urban areas alone. The number of bank branches grew from 273

in 1970 to 1,394 in 1986, 2,013 in 1990, 2,391 in 1992 and attained a peak of 3,300 as at July 2004. The astronomical increase between 2001 and 2004 was as a result of CBN regulation stipulating the establishment of bank branches in cities where CBN branches are sited for direct and efficient clearing of cheques. With the consolidation arrangement in 2005, there were series of re-alignments and mergers which resulted in bank branches increasing further to 4,579 as at December 2007 compared with a figure of 3,468 branches as at December 2006. With these financial infrastructural developments, the population are still being under-served at the population of 140 million. This translates to the fact that in 2006, about one bank branch serves 40,369 persons which improved to one bank branch to 30,574 persons as at December 2007 against an average of less than 2,800 inhabitants per bank branch office in Netherlands, Sweden, United Kingdom and the United States (Berger at al 1999 p.143). This corroborates the assertion of inadequate financial infrastructural development discussed in section 3.5.2

Even with these inadequacies and the importance the government attached to the housing sector, the CBN has encouraged the universal banks to support the development of the housing sector in Nigeria. The CBN expected the universal banks to allocate a stipulated proportion of their credit to the housing / construction sector. The minimum stipulated allocation to housing / construction was 5 percent of total loans and advances in 1979/80; increased to 6 percent in 1980 and 13 percent from 1982 till 1993 (Sanusi 2003).

If the stipulated targets are not met by any financial institution, the shortfall would be deducted from the current account statutorily kept with the CBN by the defaulting financial institution. The said amount deducted would therefore be transferred to FMBN to be utilised for granting of loans to the housing / construction sub-sector. With the partial liberalisation of the Nigerian Financial System in 1993, the preferred / non-preferred



categorisation was discontinued (Ikhide & Alawode 2001; Sanusi 2003). However, the Nigerian Financial System was fully liberalised in 2005 and the liberalisation process is discussed in the next section.

#### **5.4.2.1 Liberalisation of the Nigerian Financial System**

There has been enormous theoretical and empirical literature on state versus private ownership of non-financial firms (Megginson 2005a Chapter 2; La Porta et al 1999) and commercial banking (Megginson 2005b; Beck et al 2005; Ikhide & Alawode 2001). Banking sector reforms incorporating consolidation have been implemented in Europe, Asia, Latin America and Africa at different times for different reasons (Uchendu 2005). The privatisation and reform of banks are so important because they tend to perform three basic functions in any economic system. They play a central role in a country's payments system and serves as a clearing house for payments; they transform claims issued by borrowers into other financial instruments for potential investors and provision of mechanism for evaluating, pricing and monitoring the credit-granting function in any economy (Megginson 2005b; Imala 2005).

Reforms are carried out for the re-orientation and re-positioning of an existing institution in order to attain an effective and efficient state (Ajayi 2005). Banking sector reforms are propelled by the need to deepen the financial sector and re-position it for growth to evolve a banking sector that consistent with regional integration requirements and international best practices. Banking reforms are specifically targeted at addressing issues like weak corporate governance, risk management and high level of non-performing loans, operational inefficiencies and firming up capitalisation (Ajayi 2005; Uchendu 2005; Hall 2004).

Apart from the benefit considerations, banking sector reforms have their associated costs. These includes losses of jobs, gross country cost estimates to national economies, which during the Asian financial crisis ranged from 12 percent of GDP for Malaysia, 15 percent of GDP for Korea to 45 percent of GDP for Indonesia. The re-capitalisation cost component as percentage of GDP for commercial banks as estimated by Merrill Lynch was as high as 42 for Indonesia, 10 for Korea, 11 for Malaysia and 26 for Thailand.

For example, the Malaysian banking sector reform revolved around prudential regulations and the establishment of Danamodal Nasional Berhad and Danaharta Nasional Berhad in order to consolidate, re-capitalise and rationalise finance and banking institutions. These are achieved by applying least cost solution principles to minimise the injection of funds to the project. By the first quarter of 1999, Malaysia had spent 5 percent of its GDP or US\$4billion to purchase non-performing loans (3 percent) and re-capitalise banks (2 percent). This is in comparison with 25 percent of GDP or US\$34 billion expenditure in Thailand made up of liquidity support (15 percent), re-capitalisation (8 percent) and interest costs (2 percent). Also in case of Indonesian reforms, 50 percent of GDP or US\$ 85 billion was spent with a break-down into liquidity support (12 percent), re-capitalisation made up of deposit guarantee fund (23 percent), purchase of non-performance loans or capital for asset management company (12 percent) and interest cost (3 percent ) (Uchendu 2005).

It is argued that Malaysia better withstood the impact of the financial crisis and spent less on weathering the problems due to its strong macroeconomic fundamentals. It had low inflation rate of 3.5 percent as at the end 1996, compared with 7.9 for Indonesia, 4.9 percent for Korea, 8.4 percent Philippines and 5.9 percent for Thailand. Furthermore, most

of the capital inflows into Malaysia in terms of foreign direct investment are long-term in nature.

In Nigeria, the earliest banking reforms beginning in 1952 were intended to provide a basis for the regulation and supervision of banks. However, the reform of the mid-1980s was a response to the introduction by government of the Structural Adjustment Programme (SAP), which saw the banking system experiencing a policy shift from direct control to market-based monetary management (Beck et al 2005; Imala 2005; Ikhide & Alawode 2001; Sobodu & Akiode 1998).

The 2005 bank reform exercise in Nigeria kicked off with the issuance of the 13-point reform agenda of 6<sup>th</sup> July, 2004. It was adopted as part of the broader National Economic Empowerment and Development Strategy (NEEDS) programme to stem the slide in the Nigerian banking system and to re-focus its activities in playing a more effective intermediation roles. The reform agenda in Nigeria had two very important components namely: the requirements for banks to increase their shareholders' funds to a minimum of N25 billion; and the consolidation of their operations through merger and acquisition before the end of 2005.

The objectives of the banking sector reforms encapsulated in the reform agenda announced by the Governor of CBN on July 6, 2004 are as follows:

- (1) Requirement that the minimum capitalisation for banks should be N25 billion with full compliance before the end of 2005;
- (2) Phased withdrawal of public sector funds from banks, starting in July 2004;
- (3) Consolidation of banking institutions through mergers and acquisitions;
- (4) Adoption of a risk focussed and rule – based regulatory framework;

- (5) Adoption of zero tolerance in the regulatory framework, especially in the area of data / information rendition / reporting. All returns by banks must now be signed by the managing directors of banks;
- (6) The automation process for rendition of returns by banks and other financial institutions through the electronic Financial Analysis and Surveillance System (e-pass);
- (7) Establishment of a hotline, confidential internet address (Governor @ cenbank.org) for all Nigerians wishing to share any confidential information with the Governor of the Central Bank on the operations of any bank or the financial system. Only the Governor has access to this address;
- (8) Strict enforcement of the contingency planning framework for systemic banking system;
- (9) The establishment of an Asset Management Company as an important element of distress resolution;
- (10) Promotion of the enforcement of dormant laws, especially those relating to the issuance of dud cheques and the law relating to the vicarious liability of the Board of banks in cases of failings by the bank;
- (11) Revision and updating of relevant laws and drafting of new ones relating to effective operations of the banking system;
- (12) Closer collaboration with the Economic and Financial Crimes Commission (EFCC) in the establishment of the Financial Intelligence Unit (FIU) and the enforcement of the anti-money laundering and other economic crime measures; and

- (13)        Rehabilitation and effective management of the Mint to meet the security printing needs of Nigeria.

The CBN issued on August 5, 2004 guideline which clarified issues pertaining to consolidation and the incentives to banks engaging in merger and acquisition. The guidelines also provided amnesty to banks in respect of past misreporting of their financial condition. It was followed by a circular issued on March 31, 2005 stipulating timeliness for the three stages of the consolidation process as follows: pre-merger consent to be concluded by April 2005; approval-in-principle by August 2005 and financial approval by October 2005.

Furthermore, the CBN granted the understated forbearance on April 11, 2005 through CBN (2005b) Consolidation Incentive to a group of weak banks to further enhance the banking sector reform:

- a write-off of 80 percent of the long outstanding debts owed to the CBN by weak banks under strict pre-conditions;
- conversion of the balance of 20 percent of the debt to a long term loan of 7 years at 3 percent per annum including two years moratorium;
- a further forbearance of 20 percent of the debt if the new owners of the banks meet the new N25 billion capital base.

As argued by Imala (2005), the essence of the forbearance was to make the affected banks to be more attractive for acquisition and in the process save an estimated N108 billion liquidation costs and about 7,429 jobs.

There is no gain-saying in the fact that the development of a sound financial system requires the joint efforts of the government, the monetary authorities, the operators in the

industry and the general public. As much as macroeconomic stability is important for the financial system to evolve, the monetary authorities must enhance their supervisory framework and pursue policies that would enhance the safety, soundness and efficiency of the financial services industry.

The creation of separate restructuring agencies in Malaysia - Danamodal Nasional Berhad and Danaharta Nasional Berhad (Asset Management Company) aided the successful implementation and success of the banking sector reform and restructuring programme. The Draft Bill for the establishment of the Asset Management Company was prepared as far back as 2005 in Nigeria, but further action is yet to be taken by Presidency (Omachoru and Amaro 2009). As much as efforts were being made by the government to make the banking sector reform a success, the establishment of an Asset Management Company is still a mirage. The Asset Management Company when established can buy the non-performing loans of the banks. For instance, the five banks (Union Bank PLC; Intercontinental Bank PLC; Oceanic Bank PLC; Afribank PLC and Finbank PLC) taking over by the CBN in August 2009 had a collective loan portfolio of N2.8 trillion, of which N1.143 trillion or 41 percent of their total loans were classified as non-performing (Nwogwugwu 2009b).

**Table 5.1: Component Members of Consolidated Banks in Nigeria**

**Source: Central Bank of Nigeria Annual Report (2005 p. 45)**

**Bank Name Members of the Group**

1 <b>Access Bank Plc</b>	Marina Bank, Capital Bank International, Access Bank
2 <b>Afribank Plc</b>	Afribank Plc, Afribank International Ltd (Merchant Bankers)
3 <b>Diamond Bank Plc</b>	Diamond Bank, Lion Bank, African International Bank (AIB)
4 <b>EcoBank</b>	EcoBank
5 <b>ETB Plc</b>	Equatorial Trust Bank (ETB), Devcom
6 <b>FCMB Plc</b>	FCMB, Co-operative Development Bank, Nig-American Bank, Midas Bank
7 <b>Fidelity Bank Plc</b>	Fidelity Bank, FSB, Manny Bank
8 <b>First Bank Plc</b>	FBN plc, FBN Merchant Bank, MBC
9 <b>First Inland Bank Plc</b>	IMB, Inland Bank, First Atlantic Bank, NUB
10 <b>Guaranty Trust Plc</b>	GT Bank
11 <b>IBTC-Chartered Bank Plc</b>	Regent, Chartered, IBTC
12 <b>Intercontinental Bank Plc</b>	Global, Equity, Gateway, Intercontinental
13 <b>NIB</b>	Nigerian International Bank
14 <b>Oceanic Bank Plc</b>	Oceanic Bank, In't Trust Bank
15 <b>Platinum-Habib Bank Plc</b>	Platinum Bank, Habib Bank
16 <b>Skye Bank Plc</b>	Prudent Bank, Bond Bank, Coop Bank, Reliance Bank, EIB
17 <b>Spring Bank Plc</b>	Guardian Express Bank, Citizens Bank, Fountain Trust Bank, Omega Bank,, Trans-
	International Bank, ACB
18 <b>Stanbic Bank Ltd</b>	Stanbic Bank
19 <b>Standard Chartered Bank Ltd</b>	Standard Chartered Bank Ltd
20 <b>Sterling Bank Plc</b>	Magnum Trust Bank, NBM Bank, NAL Bank, INMB, Trust Bank of Africa
21 <b>UBA Plc</b>	STB, UBA, CTB
22 <b>Union Bank Plc</b>	Union Bank, Union Merchant Bank, Universal Trust Bank, Broad Bank
23 <b>Unity Bank Plc</b>	New Africa Bank, Tropical Commercial Bank, Centre-Point Bank, Bank of the
	North, NNB, First Interstate Bank, Intercity Bank, Societe Bancaire, Pacific Bank
24 <b>Wema Bank Plc</b>	Wema Bank, National Bank
25 <b>Zenith International Bank Plc</b>	Zenith International Bank Plc

**Table 5.2: List of Universal Money Deposit Banks in Nigeria**

No	Names of Banks	Websites
1.	Access Bank Plc	<a href="http://www.accessbankplc.com">http://www.accessbankplc.com</a>
2.	Afribank Plc	<a href="http://www.afribank.net/">http://www.afribank.net/</a>
3.	Bank PHB Plc	<a href="http://www.bankphb.com">http://www.bankphb.com</a>
4.	Diamond Bank Plc	<a href="http://www.diamondbank.com">http://www.diamondbank.com</a>
5.	Ecobank Plc	<a href="http://www.ecobank.com/english">http://www.ecobank.com/english</a>
6.	Equitorial Trust Bank Ltd	<a href="http://www.equitorialtrustbank.com">http://www.equitorialtrustbank.com</a>
7.	Fidelity Bank Plc	<a href="http://www.fidelitybankplc.com">http://www.fidelitybankplc.com</a>
8.	First Bank Plc	<a href="http://www.firstbanknigeria.com">http://www.firstbanknigeria.com</a>
9.	First City Merchant Bank Plc	<a href="http://www.fcmb-ltd.com">http://www.fcmb-ltd.com</a>
10.	FinlandBank Plc	<a href="http://firstinlandbankplc.net">http://firstinlandbankplc.net</a>
11.	Guaranty Trust Bank Plc	<a href="http://portal.gtbpplc.com/portal">http://portal.gtbpplc.com/portal</a>
12.	Intercontinental Bank Plc	<a href="http://intercontinentalbankplc.com">http://intercontinentalbankplc.com</a>
13.	Citibank	
14.	Oceanic Bank Plc	<a href="http://www.oceanicbanknigeria.com">http://www.oceanicbanknigeria.com</a>
15.	Skye Bank Plc	<a href="http://www.skyebankng.com">http://www.skyebankng.com</a>
16.	Spring Bank Plc	<a href="http://www.springbankplc.com">http://www.springbankplc.com</a>
17.	Stanbic Bank Plc	<a href="http://www.stanbic.com.ng">http://www.stanbic.com.ng</a>
18.	Standard Chartered Bank Ltd	<a href="http://www.standardchartered.com">http://www.standardchartered.com</a>
19.	Sterling Bank Plc	<a href="http://www.sterlingbankng.com">http://www.sterlingbankng.com</a>
20.	Union Bank Plc	<a href="http://www.unionbankng.com">http://www.unionbankng.com</a>
21.	UBA Plc	<a href="http://www.ubagroup.com">http://www.ubagroup.com</a>
22.	Unity Bank Plc	<a href="http://unitybanknigeria.com">http://unitybanknigeria.com</a>
23.	Wema Bank Plc	<a href="http://www.wemabank.com">www.wemabank.com</a>
24.	Zenith Bank Plc	<a href="http://www.zenithbank.com">http://www.zenithbank.com</a>



**Table 5.3: Summary of Universal Deposit Money Banks (UDMBs) Activities (2003-2007) Millions**

**Source: CBN Annual Report (2007) p. 182**

Item	2003	% Change	2004	% Change	2005	% Change	2006	% Change	2007
Reserves	362,399.9	12.7%	364,192.9	0.5%	515,207.3	41.5%	471,648.7	37.2%	646,982.0
Aggregate Credit (Net)	1,591,218.7	22.2%	2,077,779.3	30.6%	2,588,916.7	24.6%	4,066,689.3	60.6%	6,529,691.7
Loans and Advances	1,041,663.8	23.2%	1,294,449.5	24.3%	1,859,555.5	43.7%	2,338,718.8	93.9%	4,534,242.0
Total Assets	3,047,856.3	12.6%	3,753,277.8	23.1%	4,515,117.6	20.3%	6,400,783.9	57.9%	10,106,387.6
Total Deposit Liabilities	1,337,296.2	80.8%	1,661,482.1	24.2%	2,036,089.9	-10.8%	1,816,275.6	120.8%	4,010,543.0
Demand Deposits	577,633.7	26.1%	728,552.0	29.9%	946,639.6	28.4%	1,215,347.8	44.9%	1,760,783.1
Time, Savings & Foreign Currencies Deposits	759,632.5	22.8%	932,930.1	16.8%	1,089,450.3	59.7%	1,739,636.9	29.3%	2,249,759.8
Foreign Assets (Net)	416,577.8	8.6%	452,402.0	-2.75%	439,960.3	36.8%	601,692.4	54.6%	930,512.3
Credit from CBN	44,302.6	40.1%	62,079.5	-31.2%	42,687.5	-61.1%	16,594.9	80.1%	29,885.3
Capital Accounts	537,207.8	22.13%	656,076.6	38.5%	950,551.6	35.0%	1,283,146.4	68.2%	2,158,519.2
Capital & Reserves	291,252.1	19.6%	348,387.6	69.9%	591,738.7	61.1%	953,001.2	72.7%	1,646,111.5
Other Provisions	245,955.7	37.3%	337,689	6.3%	358,812.9	-8%	330,145.2	55.2%	512,407.7
Average Liquidity Ratio%	49.7	4.6%	52.0	-25.6%	38.7	110.3%	81.4	-30.5%	56.6
Average Loan Deposit Ratio (%)	70.0	4.0%	72.8	5.4%	76.7	26.2%	96.8	-13.9%	83.3

It was argued by Allen (2004) that regulatory capital requirement impacts on the banking system's ability to extend loans and advances to the productive sectors of the economy. In Chiuri et al (2002), a study of macroeconomic impact of bank capital requirements in emerging economies, the capital asset ratio of all countries studied seem on average to have risen following changes in regulation, which is a reflection on mounting losses. This also supports Anthony Saunders (2002) view that banks respond to capital regulation by substituting their existing loans with new riskier loans. It was observed that in countries with financial crisis like Venezuela, Thailand, Malaysia, Korea and Brazil, there was average substantial drop in assets, loans and/or equity.

However, in non-crisis countries like Chile, Costa Rica, India, Poland and Slovenia, during a change in regulation, a reported drop in the average level of equity, or of deposits and loans was observed. Also, there was credit contraction / slowdown in almost all the countries when regulatory changes are introduced but there are different patterns in different countries.

In Nigeria, the compliance with capital requirement regulation for the UMDBs was completed in December 2005. It could be deduced from Table 5.3 that the banking sectors looked healthier than it used to be in previous years. There was increase in all economic aggregates except total deposit liabilities, credit from CBN and Other provisions. The total deposit liabilities reduced by 10.8 percent between December 2005 and December 2006. One can explain that decrease in deposit liabilities might be due to the fact that big players within the banking system have used their deposits to acquire share in these banks to become part-owners. Also, there was astronomical decrease in credit from CBN, it could be explained that when banks are having good capital base and reserves, borrowing or taking credit from the regulatory authorities would not be necessary.

Afrinvest (2008) argues that these growth has been achieved coupled with better asset quality. Non-performing loans declined as a proportion of total loans from 16% in 2005 to 10% in 2006 and 8% in 2007. Banking penetration measured in total loans as a share of GDP at 10.9% in 2006 is low compared against a global average of 130% and compared with other emerging market economies like 50% in Ukraine and Kazakhstan, over 75% in South Africa.

The average liquidity ratio which was 49.7% in 2003, 52% in 2004 and was reduced to 38.7% in 2005. This is a sign of desperation on the part of the financial institutions to make profit by investing in long-term investment without taking cognisance of liquidity of their investments and abiding by the banking law of the nation. Between 2006 and 2007, one to two year(s) after the completion of re-capitalisation exercise, the average liquidity ratio and average loan deposit ratio reduced by 30.5 percent and 13.9 percent respectively. This is in line with observation made in Chiuri et al (2002) that in non-crisis countries of the emerging world, one to two years after a change in regulation, there is a reported drop in the average level of equity, or of deposits and loans. In Nigeria, there was drop in the deposits and loan levels of the UMDBs. However, between 2005 and 2006, the banks were having more funds than the investment outlets that the liquidity ratio was 81.4% in 2006. Apart from the UMDBs lending directly to housing/real estate, PMIs were acquired and recapitalised that resulted in the paid-up capital of PMIs increasing by 550 percent from N1.9 billion in 2005 to N12.57 billion in 2006. Most of the big financial institutions acquired or established PMIs as their subsidiaries as listed below in Table 5.4

**Table 5.4: List of PMIs affiliated to Universal Money Development Banks (UMDBs)**

Source: Extracted from various Annual Reports

Holding Companies	Primary Mortgage Institutions (PMIs)
Diamond Bank Plc	Diamond Mortgages Ltd
First Bank of Nigeria Plc	FBN Mortgages Ltd
Intercontinental Bank Plc	Intercontinental Homes Savings & Loans Ltd
Guaranty Trust Bank Plc	GTB Homes Ltd
Sterling Bank Plc	Safe Trust Savings & Loans Ltd
Spring Bank Plc	Spring Mortgage Ltd
Union Bank Plc	Union Homes Savings & Loans Ltd
Federal Mortgage Bank of Nigeria	Federal Mortgage Finance Ltd

### 5.4.3 Insurance Companies

Life funds of insurance companies are long term savings in form of annuities or endowment policies, which can only mature at the occurrence of certain events, which might be at death, accident, retirement or at maturity (Sanusi 2003; Nubi 2005 and Buckle and Thompson 2005). Life funds are not only long-term savings but relatively cheaper than deposit (Ajanlekoko 2001 and Pilbeam 2005). Therefore insurance companies have funds appropriate for financing housing construction and other long term investments, but Anderson et al (2009) argues they are traditionally the most conservative lender to housing and real estate. Under the insurance Act of 2003 section 3, no insurance company can invest more than 35 percent of its assets in real estate property.

The long-term nature of fund enables life assurance companies to invest in long-term assets to avoid mismatch risk (Ludwig 1985 and Akinwunmi et al 2007) in their funds management functions. They can extend loans for real estate development based on capital value of the policies, investment in mortgage and debentures or direct investment in real

property that is acquiring or developing landed properties (Nubi 2005). In Akintola-Bello (1986, as cited by Akintoye and Adidu 2008), a study of investment behaviour of insurance companies in Nigeria, it was analysed that the great variation in the asset holdings of life and non-life insurance companies is due to the need to match their asset composition with their liability structure.

While percentage allocated to real estate by insurance companies declined from 12.1 percent in 1985 to 7.2 percent in 1986, the allocation to mortgage loans also declined steadily to 4.8 percent in 1985, 3.9 percent in 1986 and 3.6 percent in 1987 (see Table 5.5). Data after 1987 for insurance companies cannot be provided within the short time available for this study.

**Table 5.5: Insurance Companies Investment in Real Estate/Mortgage (1984-1987)**

Source: Insurance Year Book 1988

Year	Real Estates(N) Million	Mortgage Loans(N) Million
1984	93.5 (11.7%)	57.2 (7.1%)
1985	149.2 (12.1%)	59.7 (4.8%)
1986	116.9 (7.2%)	63.0 (3.9%)
1987	144.3 (7.5%)	69.2 (3.6%)

In the Nigerian environment, the investment of insurance funds are regulated by the insurance Act 2003 and also monitored by the National Insurance Commission. Section 25 of the 2003 Act states that:

- (1) An insurer shall, at all time in respect of the insurance business transacted by it is Nigeria, invest and hold invested in Nigeria, assets equivalent to not less than the amount of policyholder funds in such accounts of the insurer.
- (2) Subject to the other provisions of this section, the assets of an insurer shall not be invested in property and securities except:

- (a) Shares of limited liability companies;
  - (b) Shares in other securities of a co-operative society registered under a law relating to co-operative societies;
  - (c) Loans to building societies approved by the Commission;
  - (d) Loans to real property, machinery and plant in Nigeria;
  - (e) Loans on life policies, within their surrender values; and
  - (f) Cash deposit in or bills of exchange accepted by the Commission.
- (3) No insurer shall (a) in respect of its general insurance business, invest more than 35 percent of its assets as defined in subsection (1) of its section in real property; or (b) in a contract of its life insurance business, invest more than 35 percent of its assets as defined in subsection (1) of its section in real property.
- (4) An insurer which contravenes the provision of this section commits an offence and liable on conviction to a fine of N50,000.

In this section, references to real property include reference to an estate land, a lease, or a right of occupancy under the Land Use Act.

Having recognised the potential contribution of the insurance industry to economic growth, the Nigerian government thought that inefficiency could be eliminated by increasing their capital. There were series of interventions in form of re-capitalisations between 1961 and 2005 in order to strengthen the insurance companies and increase their capacities (Barros et al 2008). Okwor (2005) and Barros et al (2008) outlined the main relevant legislations which include: the Insurance Companies Act of 1961, the Insurance (Miscellaneous Provisions) Act of 1964, the Insurance Companies Regulation of 1968 and the Insurance Acts of 1976, 1991, 1997, 2003 and 2005.

The 1961 Act provided for the registration of insurance companies and stipulated a mode of limited control. The 1964 Act regulated the investment of insurance funds and repealed the Act preceding it like all other Acts; the 1968 Act was meant to strengthen pre-registration conditions; the 1976 Act introduced the registration and supervision of intermediaries; the 1991 Act addressed the problem encountered in implementing the 1976 Act, while the 1997 Act re-classified insurance business and re-categorised minimum paid-up share capital requirement.

The process of restructuring necessitated an increase in the capital requirements in 2003. The Insurance Act of 2003 introduced many measures targeted at improving the performance and exposure of the industry as well as increasing the minimum paid-up capital (Okwor 2005; Barros et al 2008). Therefore, all categories of insurance business have to comply with the new minimum paid-up capital by February 2007 (see Table 5.6)

**Table 5.6: New Insurance Capital Requirement.**

**Source: Extract from CBN Annual Report (2005)**

	Pre-Consolidation Capital 2003	Post-Consolidation Capital 2007
Life Insurance Business	N150 Million	N 2 Billion
General Insurance Business	N200 Million	N 3 Billion
Reinsurance Business	N350 Million	N 10 Billion

The component of the reform in the insurance industry was to enhance the international competitiveness as well as stem the current outflow of insurance relating to risks. By February 2007, with the new capital injections, the insurance companies would be in positions to make direct investments in acquisitions of primary mortgage institutions and sectoral lending to real estate/housing construction.

#### **5.4.4 Primary Mortgage Institutions (PMIs)**

The regulatory framework for the establishment and operations of primary mortgage institutions was provided by the promulgation of Mortgage Institutions Decree No 53 of 1989. In the decree, the FMBN was given the power to licence and regulate the activities of PMIs as second-tier housing finance institutions (Sanusi 2003; Chionuma 2004 and Bala et al 2007).

The PMIs, under the decree were to mobilize savings from the public and grant housing loans to individuals while the FMBN mobilizes capital funds for the primary mortgage institutions (Sanusi 2003). The essence of their establishments is to enhance private sector participation in housing finance, whereby interested investors can obtain licence to operate with a paid-up capital of N100 million (\$862,000) compared to licence for Universal Deposit Money Banks (UDMBs) with paid-up capital of N25 billion (\$200,000,000). The exchange rate used is \$1= N116.

The criteria for licensing PMIs include the following:

- A minimum paid-up capital of N100 million
- Proof of positive shareholders funds
- Creation of mortgages for use as security for NHF loans
- They should be in the NHF contributory system
- Should operate within prescribed guidelines.

The registration of the PMIs started in earnest in 1992 and as at December 2005, there were 90 PMIs operating in the country. The table below reflects the financial activities of the PMIs between 2005 and 2007.



**Table 5.7: Performance of Primary Mortgage Institutions (PMIs) - (2005 – 2007)**

Source: Extracted from various CBN Reports

	<b>Dec. 2005</b> (N Billion)	<b>% Increase</b>	<b>Dec. 2006</b> (N Billion)	<b>% Increase</b>	<b>Dec. 2007</b> (N Billion)
No of Mortgage Institutions	90		91		93
Capitalisation	11.6	34.05%	15.55	119.29%	34.1
Total Assets	99.9	14.5%	114.39	164.3%	302.3
<b>Investible Funds</b>	<b>19.9</b>		<b>94.34</b>		<b>188.5</b>
Deposit Liabilities	13.2	469.23%	74.21	10.09%	81.7
Long-term Funds/NHF	3.3	129.09%	7.56	19.05%	9.0
Paid-up Capital	1.9	550%	12.57	22.5%	15.4
Other Liabilities	n/a		7.56	704.23%	60.8

From Table 5.7, the total number of licensed PMIs stood at ninety-three as at December 2007, with only 80 PMIs confirmed to be active in terms of rendition of return to CBN. The total assets of the PMIs stood at N302.3billion as at December 2007 compared with a figure of N114.4billion as at December 2006 implying a 164.3 percent increase. The increase was attributable to the growth in the balance sheets of the PMIs acquired by UDMBs arising from capital injection. The business activities of the PMIs are being dominated by the few ones affiliated to UDMBs (see Table 5.4). About 62 percent of these total assets are invested in Mortgage lending (CBN 2007), which reflects the unique specialisation of PMIs in the provision of funds for house purchase as financial intermediary.

Investible funds available to the PMIs totalled N188.5 billion in 2007 against N94.34 billion in 2006 and N19.9 billion in 2005 with the following break-down. The funds were sourced mainly from increases in paid-up up capital from N1.9 billion in 2005 to N12.57 billion in 2006, an increase of 550 percent and to N15.4 billion in 2007. As at December

2007, long-term funds/NHF figure was N9.0 billion compared to N7.5 billion in December 2006, which increased by almost 100 percent from a figure of 3.3billion as at December 2005. These unprecedented increases were due to the acquisition and injection of capital by the UMDBs which acquired the mortgage institutions. There was an astronomical increase of 704.2 percent increase in Other Liabilities from a figure of N7.56 billion as at December 2006 to N60.8 billion as at December 2007. This is due to the fact that the PMIs that were acquired by UDMBs had the opportunities of taking placements from their parent companies which were having lots of funds to play with after the increase in paid-up capital to N25 billion. Also, individuals are accessing the NHF through the PMIs and these are kept in their balance sheet as contingent liabilities.

In the next section, discussion is to be centred on the basis on which the National Housing Fund was established and how to access the Fund.

### **5.5 Establishment of the National Housing Funds (NHF) in Nigeria.**

The establishment of National Housing Funds (NHF) by governments in the emerging economies is to provide a subsidised housing finance. This translates into bridging the gap between people's incomes and the price of housing. Its other activities includes support for the construction, renovation and maintenance of housing by offering long-term housing loans on favourable terms to households and non-profit housing organisations (Cirman 2004; Olukayode 2004).

In Nigeria, the NHF was established by Decree 3 of 1992 (now CAP N45 Vol. 11, Laws of the Federation 2004) and launched in 1994 with the sole aim of facilitating the constant flow of low cost funds for long-term investment on housing, to nurture and maintain a stable base for affordable housing finance and to provide incentives for the capital market

to invest in property development (Latinwo 2002; Sanusi 2003 and Bala et al 2007). Mabogunje (2004) and Ozili (2009) argues that it's fundamental concept is to make private sector the main source of housing funds.

By virtue of section 2 of the 1992 Act, commercial Banks (UMDBs) and insurance companies are contributors to the fund. Section 5(1) and (2) of the Act had mandates for funding as follows:

- All UMDBs would contribute 10 percent of their loanable funds into NHF at the FMBN and earn interest rate at one percent higher than the rate chargeable on current account deposit;
- Insurance companies are required to invest (contribute) a minimum of 20% of its non-life funds and 40% of its life policies funds in real estate development of which not less than 50% shall be paid into the Fund through the FMBN at an interest rate not exceeding 4%; and
- Mandatory 2.5% tax on all wage earners earning the minimum national wage.

Bala et al (2007) noted that due to the initial implementation problems encountered like the non-availability of take-off funds by the FMBN for loan processing to the PMIs, the FMBN had to substantially accumulate contributions before disbursement commences.

However, the regulations governing loan disbursement were put in place in 1996, the presentation of cheques only commenced in June 1997, to some PMIs that fulfilled the requirements to access the funds. Latinwo (2002) and Bala et al (2007) noted that despite the initial delay in the operation of the fund and its adverse effect on the first set of licensed mortgage institutions, FMBN has been able to process loan approvals for PMIs for on-lending to contributors to the fund. Between June 1997 and August 2002, the FMBN had approved loans amounting to N1.4 billion to 2452 applicants that applied through 30

PMIs. As at August 2002, outstanding applications to FMBN from PMIs amounted to N887 million from 748 applicants through 17 PMIs and N78 billion worth of application are being processed and awaiting necessary funds for disbursement as at December 2008 (Nduwugwe 2008).

#### **5.5.1 Mortgage Facilities under NHF.**

Apart from the obligation on the part of FMBN to refund contributions to ceding contributors with accrued interest, Latinwo (2002) and Ogwu (2006) noted that the following mortgage are granted from the proceeds of the fund:

##### **5.5.1.1 NHF Mortgage Loan to PMI**

A contributor can access the fund through an accredited PMI for mortgage loan to build, buy, improve or renovate own home. This facility is granted at 4 percent interest to accredited PMIs for on-lending at 6 percent to NHF contributors over a maximum tenure of 25 years. Also, contribution to the fund must have been for at least six months before a contributor can access the facility.

##### **5.5.1.2 Estate Development Loan (EDL)**

The EDL is granted to provide developers, states housing corporations and other housing corporations to mass-produce houses for ownership by NHF contributors on mortgage basis. The facility is offered at 10 percent interest rate with a repayment period not exceeding 24 months. This encourages early disposal and repayment in order to make similar loans available to as many developers that meet lending conditions. This was introduced primarily to address the shortage of houses which previously prevented contributors from accessing the fund for home loans. As at September 2009, the

outstanding loan to the Real Estate Developers Association of Nigeria (REDAN) was N11.24 billion.

#### **5.5.1.3 Housing Co-operative Development Loan (HCDL)**

Housing Co-operative Development Loan (HCDL) is granted to housing co-operatives under similar conditions as in EDL, in addition to the submission of certain documents of such co-operatives. It is noteworthy to note that facilities extended to Housing Co-operatives are to be deployed only into residential accommodation.

#### **5.5.2 Procedure for Accessing NHF Loan Scheme**

The terms and conditions for accessing the NHF facility are outlined in Decree No 3 of 1992 and reinforced in the Statutory Instrument of 1996. It was prescribed that the Fund shall be managed and administered by the FMBN and its financial resources shall be loaned by FMBN to PMIs for on-lending to individuals who are contributors to the Scheme. Other requirements are as stated below:

##### **5.5.2.1 For PMIs**

- A PMI must have been duly licensed and accredited for NHF;
- Applications must be submitted along with applications received for loans from individuals, who must be contributors to the Scheme;
- No PMI shall, in any one year, be granted a loan in excess of 50 percent of its shareholders' fund; and
- PMIs are required to secure the NHF loan required with appropriate block of existing mortgages or any other security acceptable to the bank.

**5.5.2.2 For Individuals / NHF Contributors**

- A borrower must be a contributor to the Fund and must have contributed for a period of not less than six months;
- A borrower must have evidence of regular flow of income;
- Not more than one-third of the income of the borrower shall be considered for a loan repayment;
- Maximum loan to an individual applicant shall not be more than N5 Million (\$43,103.45) – Rate of US\$1= N116;
- Possession of valid title to land and the property to be mortgaged shall conform to the existing planning laws and regulations. A loan granted to an individual under the Fund shall be secured by a first legal mortgage of the subject residential property; and
- Loan to be granted to an individual shall not exceed 90 percent of the cost or value of the property, whichever is lower; and of that loan amount, 80 percent shall be provided by the Fund while the PMI, through which the application is made, shall provide 20 percent.

**5.5.2.3 Documentation for NHF Loan**

- Application Forms-FMBN standard Application Form for NHF Loan required by the PMI, and PMIs Application Form for NHF loan by individual applicants;
- PMI's financial reports (annual audited accounts and returns for three months preceding application), current tax clearance certificate and Board Resolution supporting loan application;
- Fidelity Bond, Errors and Omission Insurance Policy;

- Block of existing mortgages or other acceptable security – title documents, search reports, consent to mortgage, executed deed of legal mortgage, current property valuation report, current loan status report; and
- NHF proposed mortgages – current valuation report (dated, signed and sealed by Registered Valuer), loan appraisal report, loan commitment report/approval, offer letter, acceptance letter, copy of title document (C of O), legal search report and copy of Consent to Mortgage.

### **5.5.3 Critique of Funding Sources for NHF Loan**

The National Housing Fund was established under Decree 3 of 1992 and despite criticism from operators and academia within the housing finance sub-sector, the decree has not been reviewed almost two decades after its promulgation. Some the criticisms made by Buckley et al (1994) and Ozili (2009) include:

- (i) A mandatory 2.5 percent tax on all wage-earners earning N3000 (equivalent of US\$26) or more per year. These contributors would be able to withdraw these funds at retirement, with a low nominal yield rate (that is 12% - 15%).

(Effective Interest Rate = Nominal Interest Rate- Inflation Rate)

Taken inflation rate into consideration, what would be the effective yield of the savings over a long period of time? Unless inflation rate were to fall to less than 10 percent and remain there permanently, these investments in the National Housing Fund (NHF) would not be sustainable.

**Table 5.8: Inflation and Saving Rates in Nigeria (Jan 2004-Dec. 2005)**

Source: Nwaoba (2006) p.58

Month / Year	Inflation Rate %	Savings Rate %
Jan-04	15	3.5
Feb-04	16.5	4.2
Mar-04	17.8	5.7
Apr-04	18.5	3.1
May-04	19.4	3.5
Jun-04	19.4	3.3
Jul-04	19.1	4.7
Aug-04	19.1	4.6
Sep-04	18.2	4.4
Oct-04	17.1	4.4
Nov-04	16.1	4.4
Dec-04	15	4.4
Jan-05	14	4.4
Feb-05	12.9	4.4
Mar-05	12.5	4.2
Apr-05	12.6	4
May-05	12.5	4.1
Jun-05	12.9	4
Jul-05	14.2	3.8
Aug-05	15.5	3.6
Sep-05	16.8	3.4
Oct-05	17.4	3.3
Nov-05	17.8	3.4
Dec-05	17.9	3.3

From Table 5.8, using 2004-2005 figures as example, the minimum inflation rate over a period of twenty four months was between March 2005 and May



2005, when inflation rate was 12.5 percent. Theoretically when inflation rate is higher than the savings rate, return on investment is negative. Therefore any rational investor would consider the return on his investment before parting with his funds. An average investor would rather prefer to invest in the informal sector, where return on investment would be above the inflation. One might conclude that generation of savings are low in most of the emerging economies because the inflation rates are not well-managed, which results in investors having negative returns on investment.

The most striking deficiency of the national housing fund is that it fails to benefit its target population (families of people on modest-income), due to fundamental loopholes in the plans. Workers on salaries of at least N3000 per month contributes to the fund and are expected to be its beneficiary.

(ii) UMDBs are expected to contribute ten percent of their loanable funds into NHF.

They would earn interest at one percent higher than the rate chargeable on current account deposits. It is known that these banks are private sector institutions and the essence of establishing them is to make profit. A lot of taxations are already imposed on them. These include:

40 percent corporation tax; 1 percent of gross profit as Education tax; 1 percent of gross profit for small/medium enterprises (SME) fund at the CBN and now 10 percent of loanable funds for NHF.

Then, there is tendency for the banks to be involved in sharp practices to enhance their profitability.

(iii) The NHF would fail to benefit its target population (families of people on modest income). Workers earning at least N36000 per year, who are contributors to the

fund are expected to be its beneficiaries. The fund authorises N80000 as the minimum loan amount for 25 years as maximum borrowing period. At the current rate of interest, N3200 is the minimal yearly mortgage payment under these conditions. For any contributor, it is difficult to build the cheapest house at that cost.

- (iv) Part of the conditionality under the decree is that a registered land must be used as part of the collateral. It has been argued repeatedly that getting land registered and obtaining Certificate of Occupancy is a herculean task in Nigeria.

Ordinarily, subsidies are being provided by sovereign governments in order to provide housing finance at a reduced cost. In economic sense, the financial institutions seek to maintain the demand and supply of mortgage advances in equilibrium at an acceptable liquidity ratio. Disequilibrium results in a movement of the liquidity ratio away from its desired value, rationing if demand exceeds supply, and in the long run an adjustment through interest rates (Mayes 1979; Jones and Maclellan 1987).

In Nigeria, the number of potential home-owners, that is, individuals thinking of borrowing to acquire properties are more than investible funds available for housing finance supply. The shortage of housing finance supply within the financial system results in credit rationing.

## **5.6 Summary**

Housing finance has not received the necessary attention it deserves from the federal government. Before the deregulation of the financial system in 1993, sectors like Agriculture and Mining were considered as preferred sector and the financial institutions were allocated a minimum percentage of total loans and advances to be allocated to these sectors. With the re-capitalisation of the banks in 2005 and other developments all over the

world regarding shift from government-based mortgage programs to market-based housing finance, efforts were being made by the private sector to re-engineer the mortgage industry in Nigeria

The informal housing level in Nigeria reflects the situation in SSA where urbanisation rate is growing at a high rate. The provision made by the government is very low in terms of budget provisions and cannot adequately provide accommodations for individuals. Though, the large proportion of housing that is unauthorised has negative impacts on the government housing policy. Housing policy can best achieve efficiency by enabling housing markets to work. There is no gainsaying in the fact that informal housing markets operate in the same way as formal housing markets. Enabling housing markets to work entails all about correcting market failures, and reducing the excessive amount of government land use and housing regulation, but also tolerating and facilitating informal housing market. It is important for government to assist community organisations in setting up micro-finance for informal housing and infrastructure investment as a promising new line of policy.

## **CHAPTER SIX**

### **RESEARCH METHOD**

#### **6.1 Introduction**

The preceding chapters have discussed some understanding of the research context particularly on housing finance in both developed and emerging economies. Based on the literature review findings and information elicited, research question was posed upon which this dissertation rests. The discussions in this chapter is organised around the following areas: Nigeria as a case study country, research approach, research methodology adopted for this study to satisfy the research objectives as stated below, research design, operationalising and bringing the survey instruments into context and data analysis.

At the juncture, it is important to recapitulate the objectives of this study while thinking of research design. They are as follows:

- To carry out an extensive critical review of existing literature on supply of housing finance in developed economies in order to identify key factors that have contributed to the operational efficiencies and inefficiencies of their housing finance supply
- To carry out an extensive critical review of existing literature on supply of housing finance in emerging economies in order to identify key factors that have contributed to the operational efficiencies and inefficiencies of their housing finance supply.
- To conduct a critical analysis of housing finance supply characteristics in both developed and emerging economies.
- To construct a Conceptual / Theoretical Model based on the analysis of the literature review for evaluating factors affecting housing finance supply in Nigeria.
- To carry out primary data collection on housing finance supply in Nigeria and to analyse the data in order to test the validity of housing finance model developed.

- To compare theory with test, conclude and make policy recommendations.

## **6.2 Nigeria as a case study country**

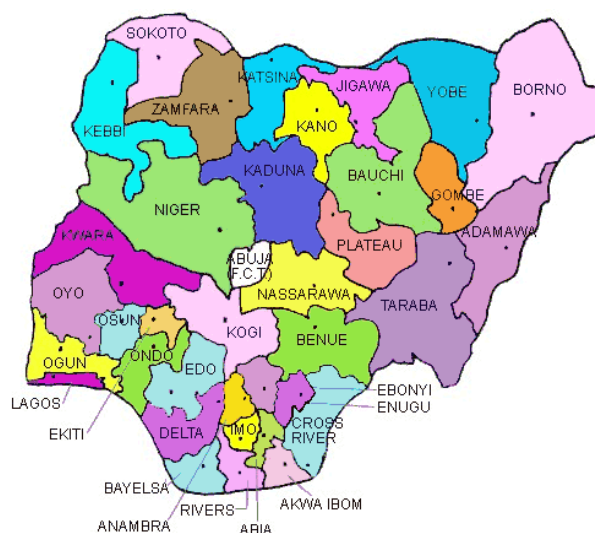
There has not been any systematic analysis of the depth of housing finance in a number of countries. Various studies in the area of housing finance had largely being descriptive in nature though highly informative (Warnock & Warnock 2008). They lack formal empirical analysis and has not been exposed to research rigour in the academic domain. Diamond and Lea (1992a) analyzed housing finance systems in five countries. Chiquier et al (2004) had case studies of eight emerging market countries, Low et al (2003), through the Mercer Oliver Wyman study, studied eight European countries and Chiuri & Jappelli (2003) worked on fourteen developed countries with emphasize on loan-to-value ratio. Recently, CGFS (2006) had data for fourteen developed and two emerging countries and Renaud (2008) presented data on forty-five countries. As important as the studies are, there was no formal empirical analysis.

One of the first set of empirical studies carried out on housing finance in emerging economies was by Deng et al (2005). It is the first rigorous empirical analysis on the earlier performance of residential mortgage market in China. The most recent empirical studies carried out are by Zavadskas et al (2004) that identified rational credit access development in developed economies and Lithuania using multiple criteria quantitative and conceptual analysis. Others include Djankov et al (2007) covering 129 countries in both developed and emerging economies using new data on legal creditor rights and private and public credit registries. Also, Warnock and Warnock (2008) used annual average data from 2001 to 2005 in many developed and emerging economies with emphasise that countries with stronger legal rights, deeper credit information system and a more stable macroeconomic environment have deeper housing finance systems.

Many of the research on housing and housing finance in emerging economies had been concentrated on Asian-Pacific and the Latin America / Caribbean regions. Even housing finance in emerging economies, especially in sub-Saharan Africa has not been sufficiently researched (Moss 2003 and Nubi 2005) and the few researches carried out are concentrated on South Africa (Roy 2007 and Moss 2003). Renaud (2008) contains data on South Africa and housing finance supply was sparingly mentioned in Nigeria. The mentioning was only raising the hope that housing finance would have a boost after the consolidation exercise must have been completed in the Nigerian banking system. A recent study by Warnock and Warnock (2008), which sourced data from IMF (2006), examined only five emerging market countries in Africa namely South Africa, Algeria, Morocco, Tunisia and Ghana. It is this gap of lack in empirical study of housing finance supply in emerging economies using Nigeria as a case study that this work attempts to bridge.

Considering the limited research into housing finance in sub-Saharan Africa, despite the fast rate of urbanisation, one might ask whether the results from research conducted in developed economies are applicable to emerging economies. Is it then necessary conducting a research on housing finance in Nigeria?

Nigeria is a classic and significant example of a country in sub-Saharan. The estimation is that 1 in 5 Africans is a Nigerian (World Bank 2004a). Table 6.1 presents a break-up of the country's population since the 1980's, which was estimated in 2002 to be about 132.8 million, with an urban population of 45.7 percent of the total and growing at 5.1 percent per annum (World Bank 2004a). The Economist (2008) estimates



the population to be about 132 million in 2005, with an urban population of 48.2 percent and an annual growth percentage change of 2.27 percent between 2005 and 2010. Nigeria also has the second largest city in Africa after Cairo; Lagos has an urban population of about 10 million people (UN-Habitat 2005 and The Economist 2008).

**Table 6.1: Population and Urbanisation Rates in Nigeria.**

Source: World Bank (2004a); The Economist (2008)

Total Population in Millions		Average Annual % Growth of Total Population		Urban Population as % of Total Population		Average Annual % Growth of Urban Population	
1981	71.1	1975-1979	3.0	1980	26.9	1975-1979	5.9
1990	96.1	1980-1990	3.1	1990	35.0	1980-1990	5.9
2002	132.8	1990-2002	2.8	2002	45.7	1990-2002	5.1
2010	132.1	2005-2010	2.27	2005	48.2	n/a	n/a

The data from the World Bank also suggests that as at 2002, the country's GDP (at constant 1995 prices) stood at US\$33,000 million and increased by about 3 percent per annum (World Bank 2006). However, (The Economist 2008) quotes the GDP as at December 2006 and 2007 to be US\$99 billion with an average annual growth in real GDP of 4.2 percent and US\$165 billion with an average annual growth of 9.1% respectively. With several years of military rule coupled with poor economic management, Nigeria experienced a prolonged period of economic stagnation which resulted in rising poverty level (Okonjo-Iweala and Osafo-Kwaako 2007).

### **6.3 Research Approach**

It is widely accepted that the paradigm adopted by a researcher shapes the way he perceives the world (Feyerabend 1978; Kuhn 1962; Lakatos 1970). There is no single scientific method that applies to comparative studies; it is argued that the choice made is driven by the research questions being answered (Denzin & Lincoln 1994; Aghaunor et al 2002). However, it is

agreed that multiple methods in comparative research helps in achieving greater understanding (Keeves & Adams 1994; Tobin & Frazer 1998).

In order to answer the research questions, an empirical study of financial intermediaries that supply housing finance was undertaken. Research in social and behavioural sciences can be subdivided into exploratory and confirmatory methods (Onwuegbuzie and Tedlie 2003). Exploratory research is conducted when a problem has not been clearly defined, or its real scope is not yet clear. It allows for familiarization with the problem or concept to be studied. Exploratory research helps determine the best research design, data collection and selection method. An explorative investigation is appropriate when a research problem is unstructured and difficult to delimit (Eriksson & Wiedersheim 1997 and Aghaunor et al 2006).

Wright Mills (1977 p.146) and Jacobs (2001 p.129) argues that to fulfil research tasks or to state them well, social scientists must use materials of history and sociology worthy of the name as “historical sociology”. The view was advanced that good sociology must incorporate the techniques of historical research “if we want to understand the dynamic changes in a contemporary social structure, we must try to discern its longer-run developments” (Wright Mills 1977 p. 152). It was further evidenced that research that does not adequately take account of past development would be of limited value. However, there is reluctance by housing researchers to delve into housing histories but relying mostly on secondary data. It is on this premise that the historical perspective is included in the methodology adopted in exploring factors affecting housing finance in Nigeria.

Confirmatory research is conducted where there is a clear understanding of a problem. There is a theory and the objective of the research is to find out if the theory is supported by the facts. Then hypothesis are explicitly stated and tested in confirmatory research. In summary, the objective of exploratory is theory initiation and theory building while confirmatory



research focuses on theory testing. However, a research can be classified on a continuum between exploratory and confirmatory research.

The research purpose and question of this thesis can be described as both exploratory and confirmatory but largely exploratory, since investigation is being made to find out factors affecting housing finance supply in Nigeria. Beyond the exploratory/confirmatory classification, research can be classified as quantitative, qualitative or mixed method. Each of these methods is explained below:

### **6.3.1 Quantitative Research Approach**

The quantitative research paradigm, also known as the “traditional”, “positivist” or “empiricist” research paradigm, is an enquiry into a social or human problem based on testing a theory made up of variables, measured with numbers and analysed using statistical procedures in order to determine whether the predictive generalizations of the theory hold true (Creswell 2003 and 1994). The method provides numeric description of trends, attitudes or opinions of a population by studying a sample of that population. This type of research methodology has some distinguishing characteristics as highlighted by Creswell (2003 and 1994) as follows; it views truthfulness or reality to exist in the world, which can be objectively and quantitatively measured; in terms of the relationship between the investigator and what is being investigated, the quantitative research paradigm holds that the researcher should remain distant and independent of that being researched to ensure an objective assessment of the situation; quantitative research is not value-laden as the researchers’ values are kept out of the study. Other distinguishing characteristics are that the entire process of the quantitative methodology uses the deductive form of reasoning or logic wherein theories and hypothesis are tested in cause-and-effect order. Concepts, variables and hypothesis are chosen before the study begins and remain fixed throughout the study, the intent of the study

is to develop generalisations that contribute to the theory and that enable one to better predict, explain and some phenomenon.

### **6.3.2 Qualitative Research Approach**

The qualitative research paradigm, also referred to as “constructivist”, “naturalistic”, “interpretative”, “post-positivist” or “post-modern perspective” approach (Lincoln & Guba 1985 and Smith 1983), is an enquiry process of comprehending a social or human problem/phenomenon based on building a complex holistic picture formed with words, reporting detailed views of informants and conducted in a natural setting (Creswell and 1994). The manipulation of variables or imposition of the researcher’s operational definitions of variables on the participants are not introduced in this method, rather, it lets the meaning emerge from the participants (Creswell 2003 and 1994).

Bogdan and Biklen (2007), Mertens (2003), Creswell (2003), Locke et al (2000), Marshall and Rossman (1999), Creswell (1994) and Lincoln and Guba (1985) highlighted the general features of the qualitative research to include the following: the enquirer visits the site of the target participants to conduct the research which gives the researcher that opportunity to extract details about the individual and also be involved in the actual experiences of the participants; the methodology is value-laden as the personal-self becomes inseparable from the researcher-self, collection of text data, description and analysis of text or pictures/images, representation of information in figures and tables and personal analysis and interpretation of findings all inform qualitative procedures. Also of note is that the reasoning adopted in qualitative research is largely inductive in which various aspects or categories emerge from those under investigation rather than those identified before the research commence. This emergence provides information leading to patterns or theories that help explain a phenomenon. Theory and hypothesis are therefore not established prior to the research and

the research questions may change and be refined as the enquirer learns what question to ask and to whom. The method is therefore emergent rather than tightly prefigured.

### **6.3.3 Mixed Methods Approach**

The mixed methods approach, also referred to as “integrating”, “synthesis”, “multimethod” and “multimethodology” employs the quantitative and qualitative research methods in one research project (Tashakkori and Teddlie 1998). It involves the collection and analysis of both forms of data in a single study. The methodology is normally appropriate in research programmes where due to the nature of the research being investigated, it is possible to collect both quantitative and qualitative data, the analysis of which would offer a better and deeper understanding of a phenomenon (Onwuegbuzie & Leech 2006; Johnson & Onwuegbuzie 2004; Creswell 2003; Mertens 2003 and Lincoln & Guba 1985). Therefore, the data collection procedure in the mixed methods approach is an amalgam of the strategies in the quantitative and qualitative research paradigms.

Several sources identify the evolution of mixed methods in psychology and in multitrait-multimethod matrix approach of Campbell and Fiske (1959) due to interest in converging or triangulating different quantitative and qualitative data sources (Jick 1983) and on to the expanded reasons and procedures for mixing methods (see Creswell 2002 and Tashakkori & Teddlie 1998).

### **6.4 Research Methodology adopted for this study to satisfy the research objectives.**

As argued by Creswell (2003 and 1994), Berg (2001), Looke et al (2000) and Bogdan & Biklen (2007); the basis of selecting a research method for a research project has to do with the objectives of the study. The aim of the study was stated in Chapter One as – investigation of factors affecting housing finance supply in emerging economies with Nigeria as the case

study country. The quantitative, qualitative and mixed methods research inquiry approaches, as the three research paradigms, were examined for their appropriateness. In effect, the mixed methods approach was eventually adopted and the justification for the adoption is explained in the next paragraph.

Mixed method approach is considered as a research design and method of inquiry that dictates the direction of the collection and data analysis whereby the collection and analysis of data has a mix of quantitative and qualitative research processes (Creswell and Plano Clark 2007). The mixed-method techniques are increasingly being used in order to expand the scope of and deepen the researcher's insights from the study (Sandelowski 2000). It combines research strategies and allows researchers to broaden understanding and obtain a clearer picture, though it may require multiple investigators. While qualitative research typically involves purposeful sampling to enhance understanding of the information-rich case (Patton 1990 and Sandelowski 2000) and exploratory in nature (Perry 1994 and Walker 1997), quantitative research ideally involves probability sampling to permit statistical inferences to be made, notwithstanding the key differences, the two techniques can be combined usefully. As advocates of mixed method research, (Sandelowski 2000 & 1995; Tashakorri & Tedlie 1998 and Swanson 1992) argued that the complexity of human phenomenon mandates have more complex research designs to capture them.

While discussing the robustness of mixed methods technique, Collins et al (2006) and Onwuegbuzie & Leech (2006) identified sixty-five purposes for mixing quantitative and qualitative approaches. Each of these purposes falls under one of the four major rationales (that is participant enrichment, instrument fidelity, treatment integrity and significance advancement). Furthermore Greene, Caracelli and Graham (1989); Caracelli and Greene (1993) identified the five general purposes of mixed-methods studies as: triangulation -

seeking convergence and corroboration of findings from different methods that study the same phenomenon; complementarity – seeking elaboration, illustration, enhancement and clarification of the results from one method with results from the other method; initiation – discovering paradoxes and contradictions that lead to a re-framing of the research question(s); development – using the results from one method to help inform the other method; and expansion – seeking to expand the breadth and range of the investigation by using different methods for different inquiry components.

The first part of the research methodology consisted of an extensive review of the relevant literature. The research objectives were:

- (a) To explore studies that are related to the present study; and
- (b) To identify the theoretical framework relevant to the research purpose and helped in designing the rest of the methodology.

In the next section, discussion will be on the research design and the sampling technique being adopted for the study.

## **6.5 Research Design**

Research designs are procedures for collecting, analyzing, interpreting and reporting data in research studies. Rigorous research designs are important because they guide the methods and decisions that researchers must make during the study and set the logic by which interpretations are made at the end of the study (Creswell and Plano Clark 2007). The basic reasoning underpinning the research design is the concept of “Analytical Generalisation” (Yin 1989; Egbu 2007). In analytical generalisation, a study is conducted in a typical case study area, and the general conclusions reached are applied to other areas with similar situations.

When a research is being carried out, the population can be very large and impossible to include all the units of the population. This might be due to time limit and cost of undertaken the research, as it is in a doctoral studies, which was mentioned as one of the limitations in section 1.6. In Nigeria, as in many of the countries in the emerging world, the postal system is very poor and there is no statistical database where information could be extracted as it is in the developed economies. This is one of the inadequacies in the emerging economies that have contributed to their inability to plan for providing habitable housing and housing finance for their population. Therefore, under this type of situation, adopting a sampling technique in any research is unavoidable. The sampling technique being adopted could be either probability (random) or non-probability (non-random) (Bryman & Cramer 2001; Lincoln & Guba 2000; Moore 1991; Greene et al 1989 and Lincoln & Guba 1985).

For this study, a stratified random sampling technique is adopted for data collection from the sampled universal banks. This is normally done by dividing the population into different strata on the basis of some common characteristics. In this case, sampled universal banks were categorised into big universal banks, medium-sized universal banks and fast-growing new-generation universal banks. For the household level questionnaires and the unstructured / informal conversational interview with corporate banking managers and some chief executive officers of insurance companies, a non-random snowball sampling technique is adopted. Such techniques cannot possibly claim to produce a statistically representative sample, since they rely upon the social contacts between individuals to trace additional respondents (Beardsworth and Keil 1992 p. 261; Payne 1999 p. 324; Abdullai 2007 p. 37).

Data collection is based in Lagos, which has a population of 10.9 million in year 2005 (The Economist 2008), the former federal capital of Nigeria. Despite the fact that the federal capital was moved from Lagos to Abuja in 1975, Lagos still remain the commercial, financial

and business headquarters of Nigeria (Ojo 2004). Iwarere and Megbolugbe (2008) noted that Lagos harbours 31 percent of all industrial establishments and 65 percent of commercial activities nationally. Hence, the headquarters of financial institutions and various branches are located in Lagos, where they could engage in profitable business transactions resulted in the headquarters of 63.9 percent of Primary Mortgage Institutions (PMIs), 89.89 percent of the Universal Money Deposit Banks (UMDBs) and 83.05 percent of the insurance companies in the country being located in Lagos (Soyibo 1996; Ojo 2004). This is because Nigeria adopts a market-based model of financial system, which enhances the role of well-functioning market with firms believing that it is easier to make profit in a big and liquid market (Holmstrom & Tirole 1993; Levine 2002). Because decisions about lending for the financial institutions originates from the headquarters, which are located in Lagos, collection of data were effectively done at the head office. Secondary data were extracted from the balance sheets of the universal banks and informal conversational / unstructured interviews were conducted in Lagos. Additional survey instruments in form of survey questionnaires were dispatched to bank customers (household level) that have recently applied or enjoying housing finance from these financial institutions to access information from those demanding for housing finance and make the study reliable. This representativeness of data at household level is important to get an accurate picture of patterns of access and usage of housing finance supply across the population (DFID 2004 p.6; Jones & Maclellan 1987).

Whatever research methodology is adopted for the research, reliability and validity issues have to be considered. Creswell (2003), Bryman and Cramer (2001), Creswell and Miller (2000), Lincoln and Guba (2000), Creswell (1998), Lincoln and Guba (1985) explained reliability and validity in research. Reliability and Validity are tests of the trustworthiness of the measurement instruments used in research (Babbie 2000; Blalock 1979; Carmines.& Zeller 1979 and Hulchanski 1979). *Reliability* of a measure refers to the extent to which a test

or measuring procedure yields the same result when tried repeatedly, that is consistent. It might be internal or external validity. External reliability is the more common of the two and refers to the degree of consistency of a measure over time. Validity is the extent to which a measure is actually in line with what the researcher sets out to measure and the extent to which the results can be applied to new settings. Denzin (1970; Flick 2004) suggested that the adoption of triangulation offers greater validity and reliability than a single methodological approach.

## **6.6 Target Population**

An examination of archive documents such as policy and internal papers are the richest source of data for housing policy researcher (Malpass 2000a; Jacobs 2001). Therefore, secondary data was extracted from the annual reports of six Universal Money Deposit Banks (UMDBs) to determine the abilities and willingness of the universal banks in lending to housing. An adequate sample size should allow reliability of results so that the investigation can be repeated with consistent results. A sample is a small set of data drawn from a population as Leishman (2008) noted that the sample should be sufficiently and demonstrably representative of the population in order to allow analysis of the sample to be used. However, Chiuri et al (2002 p.898) noted that any attempt to select banks suffering from negative capital shock or any other deficiencies for that matter, since the respondents do not know what would be the outcome of figures being given out, runs into a small sample problem.

Mathesen and Pellechio (2006) noted that the balance sheets of the central bank and financial institutions are central to the assessment of risks and overall resilience to shocks. From a financial intermediation perspective, lending is considered as the mobilisation of resources from the surplus sector and allocated to the deficit sector for entrepreneurial venture through effective risk management. Then, universal / commercial bank's balance sheets are central to



the allocation and transmission of risk in any economy. Analysis of the balance sheets of systematically important financial institutions gives warning signals about the state of that economy. Maturity transformation, mobilizing short-term deposits to extend long-term loans is fundamental to financial intermediation, giving rise to the risk of a deposit run. This is a peculiar nature in most of the emerging economies. The extraction of figures from balance sheets of these banks in Nigeria gives a picture of whether they have the capacity to lend for housing acquisitions without being exposed to various forms of risks.

Kochi (1988), Betubiza & Leathan (1995) and Bessis (2004) observed ways in which bank capital reflected in the balance sheet have a positive relationship with risk reduction. First, it provides a cushion for firms to absorb losses and remain solvent. Secondly, it provides ready access to financial markets and thus guards against liquidity problems caused by deposit outflows. Even in the NHF facility outlined in Decree No 3 of 1992, it is stated that no PMIs shall, in any one year, be granted a loan amount in excess of 50 percent of its shareholders' fund. This translates to the fact that PMIs that are well-capitalised would have more access to the NHF than those PMIs that are not well-capitalised.

The sampled universal banks were selected from the twenty-four banks operating in Nigeria. Their selection was based principally on the willingness of their top management at the head office to take part in the study. The chosen universal banks are two of the three big universal banks, two medium-sized banks and a fast-growing new-generation bank. The two big universal banks held about 35 percent of total deposit liabilities of N4 trillion in 2007 and N3 trillion in 2006. However, the sampled universal banks held about 50 percent of total deposit liabilities in year 2007 and 2006.

Interviews were conducted with the loans and advances / corporate banking managers of these universal banks and chief executive officers of some insurance companies to assess the

willingness of the financial institutions to lend towards housing acquisition. The informal conversational / unstructured interview was adopted where questions emerge from the immediate context and are asked in the natural course of things with no predetermined wording or question topics (Patton 1990; Hughes 2002). Other definitions given for unstructured interview includes; Minichiello et al (1990) defines it as interviews in which neither the question nor the answer categories are predetermined rather they depend on social interaction between the researcher and the informant. Punch (2005) describes unstructured interview as a way to understand the complex behaviour of people without imposing any a priori categorisation, which might limit the field of enquiry. Patton (2002) considers unstructured interview as a natural extension of participant observation, because they so often occur as part of ongoing participant observation fieldwork.

However, in the standardised open-ended interview, the exact wording and sequence of questions are determined in advance and all interviewees are asked the same questions it allows the respondents freedom to answer questions (Sowell & Casey 1982). The loans and advances managers were targeted in that lending functions made up of asset / liability management and optimal asset management of the financial institutions are their responsibilities. Hence, they are identified based on their academic qualification and exposure to lending procedures within the financial industry rather than using staff in the lower cadre.

With extraction of secondary data only from the annual reports of UDMBs could be seen to introduce an element of bias, self-justification or post-rationalisation that put the data into question. This may be seen to introduce problems with data validity, which can be avoided by triangulation: collecting information about a single phenomenon from more than one source (Hammersley & Atkinson (1983 p. 199). Denzin (1970) and Walker (1997 p. 156) explained

that triangulation can also be adopted through using a combination of techniques to gather and interpret data.

Therefore, four hundred supplementary questionnaires were administered to households and individuals that have made applications at one time or the other, to the financial institutions to benefit from housing finance supply. The essence of collecting data from more than one source, which is triangulation, is to help achieve reliability and subsequent validity of the results.

### **6.7 Triangulation Approach**

It is the most common approach to mixed methods designs and the purpose of this design is “to obtain different but complementary data on the same topic” (Morse 1991 p.122; Creswell, Plano Clark et al 2003; Creswell & Plano Clark 2007) to best understand the research problem. In housing finance studies, triangulation as a model attempts to observe housing finance supply from the macroeconomic perspective and housing finance demand from the household / microeconomic perspective (Jones and Maclellann 1987; DFID 2004). Data was collected and analysed by means of document examination, informal conversational interview and survey questionnaires (triangulation approach). A term borrowed from navigation and surveying, where a minimum of three reference points are taken to check an object’s location (Smith 1975; Easterby-Smith et al 2002; Flick 2004; Downward & Mearman 2005). Triangulation was chosen because it offers the use of different research techniques giving many advantages. The key justification for the usage of triangulation approach is that it offers greater validity and reliability than a single methodological approach (Denzin 1970 & 1978; Jick 1983; Modell 2005 and Aghaunor et al 2006. Dixon et al (1988) are of the opinion that most research objectives can be researched using more than one technique of data collection and providing detailed data about the phenomenon being

investigated. These usage of different collection methods helps in generating multiple and different perceptions of the problem under investigation and gives a wider view of the research problem.

Within social and managerial research, there are four distinct categories of triangulation namely theoretical, data, investigator and methodological triangulation with that aim of enhancing the validity of research findings (Easterby-Smith et al 2002; Ryan et al 2002; Downward & Mearman; Modell 2009). The four categories are individually discussed below:

***Theoretical Triangulation:*** Here, models are borrowed from one discipline and using them to explain situations in another discipline. In another way, theory triangulation implies that hypothesis or researcher interpretations are informed by more than one theoretical perception (Modell 2005). This can frequently reveal insights into data which had previously appeared not to have much importance.

***Data Triangulation:*** refers to research where data is collected over different time frames or from different sources. Many cross-sectional designs adopt this type of research. Downward and Mearman (2005) noted that survey data can be combined with time series data. Even, insights of a person at different times could be triangulated to make on inference about the whole time period. It could be a combination of survey and interview data.

***Triangulation by investigators:*** This refers to research where different people collect data on the same situation and data, and the results are then compared. This is one of the advantages of a multi-disciplinary research team as it provides the opportunity for researchers to examine the same situation and to compare, develop and refine themes using insights gained from different perspectives.

**Methodological triangulation:** It is Denzin's fourth variant of triangulation design was referred to in Tashakkori and Teddlie (1998) as the "multilevel research". This was adopted by Todd (1979), using both quantitative and qualitative methods of data collection. Todd pointed out that triangulation is not an end in itself, but an imaginative way of maximising the amount of data collected. Also, Elliot and Williams (2002) studied an employee counselling service using qualitative data at the client level, qualitative data at the counsellor level, qualitative data with the directors and quantitative data for the organizational level (Creswell and Plano Clark 2007).

For this study, data and methodological triangulation were adopted to help achieve reliability and subsequent validity of the results.

## **6.8 Questionnaire Design**

In principle, there are many research methods (instruments) for satisfying various research needs (Wilkson & Birmingham 2003; Ahadzie 2007). In good research, the choice should be appropriate, reasonable and explicit (Denscombe 2003). Therefore, in adopting a mixed method research approach for a study involves using different forms of instruments for data collection. To investigate factors affecting supply side of housing finance, secondary data were extracted from the balance sheets of the UMDBs, archival data for the sectoral allocation of loans and advances between 2003 and 2007 were obtained from the sampled financial institutions and the loans and advances / corporate banking managers in the UMDBs some insurance executives were interviewed. The interview was in form of informal conversation / unstructured interview where questions emerge from the immediate context and are asked in the natural course of things and there are no predetermined wording or question topics (Patton 1990; Hughes 2002). Other forms of interviews identified are

interview guide approach, standardised open-ended interview and closed quantitative interviews.

The main survey instrument used for investigating factors affecting demand side of housing finance is the fully structured standardised questionnaire. It means that all the questionnaires administered were made of a set of pre-designed questions with a set of answers from which the respondents had to choose. This method has a main advantage in its ability to achieve reliability of measurements. In adopting this approach, respondents are restricted to a set of answers to ensure that consistent responses are obtained from all respondents. Other advantages of adopting this approach include the ease it provides in making statistical inferences and generalisation of collected data (Punch 2005). Again, it brings standardisation to bear to the survey exercise since field assistants other than designer of the research was engaged in distributing and conducting the survey (Hammond 2006a and Egbu 2007). The need to use field assistants and the translation of survey questions into vernacular, if need be, require that questionnaires are pre-designed with a set of answers for respondents to pick from.

However, the major weakness of the pre-designed questions and answers approach has to do with the emphasis placed on the researcher's ability to determine before hand, the items to include and the set of answers from which the respondents are to choose from. The respondents are somehow restricted in their choice of answers, though this weakness can be remedied by doing an extensive review of the literature for the study. Also the response rate is normally poor and there is the risk of shallow (non usable) replies (Kometa 1995; Maisel and Perssel 1996 and Ejohwomu 2007).

### **6.8.1 Questionnaire and Variables for Supply of Housing Finance:**

Apart from figures for Equity Base, Deposit Structure, Level of Competition determined by the total assets of each bank and interest rates extracted from the balance sheets of the UMDBs, requests for secondary information (archival data) were sent to the sampled banks. Secondary information requested relates to the sectoral break – up of their lending into different sectors namely housing sector, agriculture sector, commerce sector and manufacturing sector. The data for these ten banks were used as sample to carry out the study as Leishman (2008) argued that in using a sample for analysis to form inferences about a population, the sample is expected to be sufficiently representative and then this class can be taken as representative of the group.

In discussing the adequacy of sample size, Comry and Lee (1992) noted that sample size of 50 as very poor, 100 as poor, 200 as fair, 300 as good, 500 as very good and 1000 as excellent. As a rule of the thumb, Tabachnick and Fidell (2007) argued that it is alright to have at least 300 cases for factor analysis. However, Guadagnoli and Velicer (1988, as cited by Tabachnick and Fidell 2007) observed that solutions with several high loading marker variables ( $>0.80$ ) do not require large sample size with 150 cases considered adequate while under some other circumstances, 100 or 50 cases are sufficient (Sapnas & Zeller 2002; Zeller 2005, as cited by Tabachnick and Fidell 2007). Again, Nunnally (1978) suggested a 10 to 1 ratio, that is, ten cases for each item to be factor analysed while Tabachnick and Fidell (2007) suggested five cases for each as being adequate. Cohen (1988, as cited by Pallant 2007) has a table showing how large a sample size should be to achieve a researcher's desired results.

Informal conversational / unstructured interviews were conducted with the loans and advances / corporate banking managers of these sampled banks to assess the willingness of the banks to lend to housing. This form of interview is most useful when the researcher

intends to gain an in-depth understanding of a particular phenomenon like housing and housing finance. The variables includes Income of applicant, Loan to income ratio, control of lending / collateral, macroeconomic forecasts / regulatory requirements, safety of credit risk assets and market share.

The structure of the interview can be loosely guided by a list of questions called an *aide memoire* or agenda (Minichiello et al 1990; Payne 1999; Briggs 2000; McCann & Clark 2005). An *aide memoire* or agenda is a broad guide to topic issues that might be covered in the interview rather than the actual questions to be asked. It is open-ended, flexible and tends to be similar to a conversation (Burgess 1984; Payne 1999). Unstructured interview is used interchangeably with the terms like informal conversational interview, in-depth interview, non-standardised and ethnographic interview. The unique attribute of an unstructured interview is its conversational nature, which allows the interviewer to be responsive to individual differences and situational changes (Patton 2002). However, it is important for interviewers to be adept at using the appropriate type of question; in that the kinds of questions posed are crucial to the unstructured interview (Burgess 1984).

The three main types of questions identified by Spradley (1979) include; descriptive questions, which allow interviewees to provide descriptions about their activities; structural questions, which attempts to find out how interviewees organise their knowledge; and contrast questions, which allow interviewees to discuss the meanings of situations and make comparisons across different situations. Question types are applied at different stages of the interview to encourage interviewees to provide more details.

### ***6.8.2 Questionnaire and Variables for Demand of Housing Finance***

It was argued by DFID (2004 p.6) that most financial sector data comes from financial institutions themselves, but representative data at a household level is what is really required



to get an accurate picture of patterns of access and usage across the population. Jones and MacLennan (1987 p.206) observes that demand factors may be relevant as creditworthy households may not even seek housing finance. As identified by Lee (1968) and Megbolugbe et al (1991), the survey themes and instruments that emerged from the literature on demand for housing finance are: Income, relative price of housing, prices of other goods and services and household characteristics made up of the age of applicant, marital status.

**Table 6.2: Summary of Survey Themes and Instruments (Appendix B)**

Theme Section	Survey Theme	Number of Survey Instrument
<b>A</b>	General Background	Surv. Instrument 01-04
<b>B</b>	Household Characteristics	Surv. Instrument 05
<b>C</b>	Tenure of the House	Surv. Instrument 06-09
<b>D</b>	Housing Finance	Surv. Instrument 10-33

Questionnaire for users of housing finance in Nigeria (Appendix 4) is divided into four sections. Section A addressed issues about General Background of the respondent made up of borrowers' characteristics including monthly income, borrower's age, gender, marital status, education, occupation and job position. Deng et al (2005) being one of the empirical studies carried out on mortgage lending in an emerging economy stated that borrower's characteristics are significant in determining repayment behaviour. In assessing early performance of residential mortgage in China, Deng et al (2005) therefore based their analysis upon a unique micro-mortgage dataset which provides valuable information about the borrower's characteristics. Section B touched on the household characteristics, Section C delved into the tenure of the house and Section D asked questions about variables that affect the demand for housing finance.

## **6.9 Missing Data**

Missing data is considered to be an important issue in data analysis. It was argued by Tabachnick and Fidell (2007 p. 63) that if a few data points, say 5 percent or less are missing in a random pattern from a large data set, the problems are not so serious. Efforts were made to collect sets of data, some likely sets of missing data were anticipated, those occurring due to participants' incomplete responses or secondary data with missing variables. Missing data in the secondary data were managed using the mean substitution importation method for missing data. While requesting for sectoral allocation of loans and advances granted over a period of five years, one of the UMDBs (UBN Plc) could not produce sectoral allocation figure of loans and advances for year 2005, therefore, mean substitution method was adopted in providing data for 2005. Of the different imputation methods that exist for missing data management (case substitution, mean substitution, cold deck imputation, regression imputation and multiple imputation); mean substitution is one of the most widely used methods as the mean is considered the most appropriate approach for single replacement value (Hair et al 1998; Field 2000; Ejohwomu 2007 and Egbu 2007).

## **6.10 Data Analysis**

A well-functioning mortgage market is considered by Jaffee and Renaud (1977), Jaffee (2008) and Renaud (2008) to have large external benefits to the domiciled national economy. Quigley (2000), Oloyede (2007) and Warnock & Warnock (2008) are of the opinion that in the absence of a well-functioning housing finance system, there would be inadequacies of market-based provision of formal housing. And any attempt made to provide subsidised housing finance in form of public housing and subsidised interest would be a short-term solution (ibid).

One of the first set of empirical studies carried out on housing finance in emerging economies was by Deng et al (2005). It is the first rigorous empirical analysis on the earlier performance of residential mortgage market in China. Another recent empirical studies carried out was a Lithuanian study using multiple criteria quantitative and conceptual analysis by Zavadskas et al (2004). Others include Djankov et al (2007) covering 129 countries in both developed and emerging economies using new data on legal creditor rights and private / public credit registries.

Warnock and Warnock (2008) used annual average data from 2001 to 2005 in many developed and emerging economies with emphasis that countries with stronger legal rights, deeper credit information system and a more stable macroeconomic environment have deeper housing finance systems. It is this gap of lack in empirical study of housing finance in emerging economies using Nigeria as a case study that this work attempts to bridge.

Both supply and demand side of survey were taken into context to generate response to the research questions. The data collected were organised and prepared for analysis. The organisation involves sorting and arranging the information collected into two main types since data triangulation was adopted, depending on the sources of the data to either demand for housing finance or supply of housing finance category.

For data related to demand for housing finance, proportion method was used for analysis. Proportion Method is a statistical means of representing the significance of a variable relative to all other variables under consideration. Statistically, it is represented by the total score of the variable divided by the overall sum of scores of all variables being considered and it is usually expressed in percentage.

The aim of this study centred on housing finance supply in Nigeria, therefore the methodological framework adopted for the supply side of housing finance was Multiple

Regression. As an extension of bivariate regression, several independent variables are combined to predict a value for the dependent variable (Pallant 2006; Tabachnick & Fidell 2007). In the case of this study, various independent variables like share capital, reserves, deposit, other investments, total assets etc are used to predict value for dependent variable which is loan to housing (supply of housing finance).

The multiple regression technique was adopted rather than other possible analysis method like multivariate analysis of variance because it can be used for data in which the independent variables are correlated with one another and even to an extent with the dependent variable. In this case, since all the independent variables are extracted from the liability side of the balance sheets of financial institutions, some of the independent variables would correlate with each other (see Table 9.2). Also it can show at a glance, changes in quantitative terms and effects that each independent variable has on the dependent variable.

Multivariate analysis of variance was considered not suitable because it is applicable under situations where there are several dependent variables. However, in this case, we have a single dependent variable and several independent variables; therefore the general linear model is considered favourably to detect group difference on a single dependent variable (Bray & Maxwell 1995).

It was observed from the correlation matrix that there was high correlation between some of the independent variables. This is not surprising because all the independent variables were extracted from a source, that is, the balance sheet of these financial institutions. Therefore, factor analysis / principal component analysis was adopted as the *post hoc analysis* technique to convert the variables into clusters of factor.

The Statistical Package for the Social Sciences (SPSS) and Excel were used for data analysis. SPSS is the most widely used package for analysing social data (McCormack & Hill 1997; Easterby-Smith et al 2002).

The point is already made that in qualitative research, interviews are usually tape-recorded and transcribed whenever possible. Furthermore, Heritage (1984 p.238); Payne (1999 p. 321) highlighted the advantages of recording and transcription of interviews to include: correction of the natural limitations of our memories and of the intuitive glosses that we might place on what people say in interviews; it allows more thorough examinations of what people say; it permits repeated examinations of the interviewees answers; it opens up the data to public scrutiny by other researchers; it therefore helps to counter accusations that an analysis might have been influenced by a researcher's values or biases and it allows the data to be re-used in other ways from those intended by the original researcher.

Despite these advantages, the procedures are considered to be time-consuming and require good equipment and specifically, transcriptions require a daunting pile of papers. In consideration of time limit for a PhD programme and the qualitative research method being used as a supplementary rather than main data source; note taking was considered as data source for the unstructured interview and conversation / discourse analysis was adopted for the data analysis. Conversation analysis delves into how people in societies produce their activities and makes sense of the world around them (Pomerantz and Fehr 1997 p. 65). Apart from being best known for analyzing informal conversation, it can be used to investigate any area of real life where discourse is part of the interaction between individuals (Gunnarsson 1997; Hastings 2000)

On the other hand, Parker (2004); Hastings (2000) and van Dijk (1997) consider discourse analysis as the study of "talk and text in context" and helps in capturing how the use of

language interacts. Discourse and language are considered as being important in understanding how we perceive and make sense of the social world (Jacobs and Manzi 2000). Discourse analysis offers housing studies two important challenges whereby discourse perspective implies an epistemological break with positivism and posits a constructionist epistemology, linking the understanding of the world to social and linguistic practices. The reliance of much of housing research on positivistic theories of knowledge, which assume the possibility of objective, disinterested knowledge of reality, has well been documented (Clapham 1997; Jacobs and Manzi 2000; Hastings 2000). Secondly, discourse analysis gives preference for housing questions to be explored from non-traditional disciplinary perspectives whereby disciplines like psychology and philosophy are introduced as additional resources through which housing process might be investigated. Discourse analysis is also considered to be a relatively new methodology; the procedure entails an obligation to examine not just what is apparent at a superficial level but also the hidden and unintended consequences of social action (Jacobs 1999).

### **6.11 Ethical Consideration**

To have the output of this type of research admissible in both academia and industry, it is necessary to obtain ethical approval from the school under which the research is being undertaken. An ethical approval was therefore sought and obtained from the Ethical Committee, School of Engineering and the Built Environment of the University of Wolverhampton.

While carrying out a research of this magnitude, an investigator has an obligation to respect the rights, needs, value and desires of the respondents and participating organisations. Therefore, an informed consent form was prepared for the respondents and participating organisations to sign before their involvement in the research.

The contents of the form include:

- The right of each member of the target population to participate voluntarily, to refrain from answering any question they do not intend to answer, to withdraw at any time so that they were not being coerced into participating;
- The purpose of the study, assuring them that the exercise was purely academic and that their responses will not be used for other issue(s) to their detriment;
- The right to ask questions, obtain a copy of the results and have their privacy respected and signatures of the respondents / participating organisations and the researcher agreeing to these questions and
- The form acknowledged that the participants' rights had been protected during the data collection process.

Also, to protect the identity of individuals, names of respondents were totally disassociated from responses during the cleaning and transcription processes, at least, for the structured questionnaire for users of housing finance.

### **6.13 Summary**

This chapter has outlined the basic ways by which the data for investigating factors affecting housing finance supply in emerging economies using Nigeria as the case study country has been arranged. Two research methodologies were employed and data were collected from financial institutions supplying housing finance and individuals demanding for housing finance. These methodological and data triangulation coupled with the informal conversation with the bank's loan and advances managers helped in achieving reliability and the results of the study valid.

## **CHAPTER SEVEN**

### **DISCUSSION OF RESULT**

#### **7.1 Introduction**

This chapter is devoted to the analysis of empirical data collected from the case study country – Nigeria. Descriptive statistics would be adopted to carry out preliminary data analysis on factors affecting housing finance supply in Nigeria. These descriptive statistics are used to describe the basic features of the data in this study. They summarise the samples and the measures, and jointly with simple diagrammatic and graphic analysis, they provide a basis of every quantitative analysis of the data. Therefore, the chapter is divided into the following sections: Section 7.1- Introduction, Section 7.2- Presentation and Analysis of Time Series data, Section 7.3- Reliability of the data, Section 7.4- Trend estimation for Housing Finance in Nigeria. Other subsections are: 7.4.1 – Loan to Housing Trend 2003-2007, 7.4.2 – Competitive Index and lending in Nigeria, 7.4.3 –Increase in Capital Base and Loan to Housing, 7.4.4 – Increase in Deposit Base and Loan to Housing, 7.4.5 – Interest rate and Loan to Housing, 7.5 – Linkages of lending to Housing, Agriculture, Manufacturing and Commerce and finally Section 7.6 is the summary.

#### **7.2 Presentation and Analysis of time series data**

The longitudinal / time series data for this study covers a period of 5 years (2003-2007), which were extracted from the balance sheets of sampled Universal Money Deposit Banks (UMDBs). It is important to note that the extraction of this secondary data, coupled with the completed questionnaire for supplier of housing finance (Appendix I), gives a macro view of Housing Finance Supply in Nigeria. This exercise would assist in the conceptualisation of a frame-work for testing the housing finance supply model in Nigeria.



### **7.3 Reliability of the data**

The application of longitudinal / time series data in research studies assist observers in monitoring sovereign countries and institutions over different levels of economic development and government regulations (Djankov et al 2007). An example is Nigeria, where UMDBs were required by capital requirement regulation to increase their paid-up capital to a minimum of US\$200 Million as at December 2005. In this study, efforts would be made to assess the activities of the financial institutions towards lending to housing before and after the increase in their paid-up capital. Again Djankov et al (2007) noted further that institutions could be observed from their figures, whether there are signs of improvement over a period of time. Improvement is considered to be a universal terminology and it can be translated in many ways. For the financial institutions, improvement could be their contributions to the economic development of their domiciled country. Considered in another way, improvement might be based on the services being rendered to their customers in terms of waiting time in the banking halls.

Chiuri et al (2002) and Mathesen and Pellechio (2006) noted that the balance sheets of the Central Bank and financial sector institutions are central to the assessment of risks and overall resilience to shocks. Lending is considered from financial intermediation perspective as the mobilisation of resources from the surplus sector and allocation to the deficient sector for entrepreneurial venture through effective risk management. Therefore, the balance sheet of financial institutions is central to the allocation and transmission of risk in any economy.

Usually, time series data are discounted by the annual consumer – price index (see Ejohwomu 2007; Hammond et al 2009), but this study covers a period of 5 years (2003-2007) where there has been consistency in the administration of the monetary policies adopted by the central government in Nigeria, therefore the extracted figures were not discounted by the

annual consumer – price index. Knowing that the essence of an indexed data is a statistical estimate of the movement of prices of goods and services (ONS 2006; Ejohwomu 2007), the two important main uses of indexing data are as a measure of inflation and for the evaluation (or indexation) of wages and salaries.

#### **7.4 Trend Estimation for Housing Finance Supply in Nigeria.**

A time series is a sequence of data points, measured at successive time, spaced at time intervals. The time series analysis usually adopts a statistical method called trend estimation. Trend estimation is the application of statistical techniques to make and justify statements about trends in a time series data. In this case, absolute figures for housing finance / loans extended by different financial institutions within the chosen sample population are discussed over a period of five years (2003-2007).

#### **7.4.1 Loans to Housing Trend 2003-2007**

S/N	Bank No	Year	Share Capital Reserves (Millions) +	Loans to Housing (Millions)	% Change
1.	11	2003	10,487	906	-
2.		2004	12,968	1,631	80
3.		2005	36,168	3,426	110
4.		2006	40,646	5,003	46
5.		2007	47,432	11,891	137
6.	8	2003	25,040	9,424	-
7.		2004	38,621	11,536	22
8.		2005	44,672	12,155	5.36
9.		2006	60,980	10,870	(10.5)
10.		2007	77,351	17,919	64.8
11.	20	2003	32,730	10,599	-
12.		2004	34,492	7,176	(32)
13.		2005	39,129	10,445	45.5
14.		2006	95,685	13,714	31.3
15.		2007	96,630	14,926	8
16.	6	2003	6,166	68	-
17.		2004	8,423	62	(8.8)
18.		2005	10,934	130	109.7
19.		2006	28,405	405	211.5
20.		2007	32,121	18	(95)
21.	19	2006	26,319	7,420	-
22.		2007	26,800	6,074	(18)
23.	23	2005	23,808	3,335	-
24.		2006	20,539	3,379	1.31
25.		2007	25,182	3,441	1.83

**Table 7.1: Loans to Housing Trend 2003-2007**

The housing loan granted by Bank (11), a bank that started operations in 1990, increased from N906 million in 2003 to N1.631 billion in 2004, an increase of 80 percent. Between 2005 and 2006, the outstanding housing loan figure increased in absolute term from N3.426 billion to N5.003 billion resulting in a percentage increase of 46 percent. There was an increase from N5.003 billion in 2006 to N11.891 billion in 2007, which resulted in percentage increase of 137 percent.

For Bank (8), its housing loan figure outstanding increased from N9.424 billion in 2003 to N11.536 billion in 2004. This increase resulted in a percentage increase of 22 percent, however between 2005 and 2006, there was a percentage decrease of 10.5 percent. The absolute figure outstanding in 2005 decreased from N12.155 billion to N10.87 billion in 2006 and increased to N17.919 billion in 2007, a percentage increase of 64.8percent.

The Bank (20) had an absolute outstanding housing loan figure of N10.599 billion in 2003 decreased by 32 percent to N7.176 billion in 2004. Because the figure for 2005 was not available, the average of 2004 and 2006 figures were used to arrive at figures for Year 2005. Between 2006 and 2007, the outstanding housing loan figure reflected N13.714 bilion in 2006 and N14.926 billion in 2007, this movement resulted in percentage increase of 8 percent.

Unlike the other three banks discussed above, which are public limited companies, then Bank (6) was established in 1990 and its a private limited company. The only time that their shares can be bought is when they are doing private placement with selected investors. In 2003, the bank had outstanding housing loan figure of N68 million, which had a reduction of 8.8 percent to N62 million in 2004. The outstanding housing loan figure increased to N405 million in 2006 but reduced to N18 million in 2007, a reduction of 95 percent. One could presume that it is either this bank is not liquid enough and was re-calling some loans given for housing acquisition or the interest charged on their lendings are high and borrowers are quickly paying back the money borrowed for housing acquisition.

Bank (19) emerged from the coming together of five banks during the consolidation exercise carried out by the CBN in 2005. The purpose of the consolidation exercise was a requirement that all operating UMDBs in Nigeria must have a minimum paid-up capital of US\$200 million. Therefore, UMDBs that could not afford a minimum paid-up of that magnitude were

expected to merge with other UMDBs. Since the merger was consumated in 2005, balance sheet of only two years were available from this bank. The post-consolidation figure for 2006 was N7.4 billion which reduced by 18 percent to N6.074billion in 2007.

For Bank (23), the absolute figure for loans to housing for 2005, 2006, 2007 were N3.335billion, N3.379billion and N3.441billion respectively. There was no appreciable improvement over a period of three years (2005-2007). The inactivity in the housing finance market might be due to the poor performance of the UMDBs within this period.

After the consolidation exercise in 2005, the three banks namely Banks 8, 20 and 11 had substantial increase in their lending for housing acquisition. This gives the impression that the banks were liquid after the exercise and had funds to invest in that subsector. The fact that all the banks had a minimum paid-up capital of US\$200 million, no bank could be considered as small, therefore mobilisation of deposits and selling of other banking services became very competitive.

In the next section, an assessment of competition in the Nigerian banking industry is discussed.

#### **7.4.2 Competitive Index and Lending in Nigerian Banking Industry**

The competition faced by any bank in a given market affects its investment decisions. However good the balance sheet of the financial institution and its goodwill, without being proactive in its area of operation, that financial institution would loose percentage of its market share. The proxy for competition faced by a bank was computed by Betubiza and Leatham (1995) as:

$$\text{Competition index} = 1 - \frac{\text{bank assets}}{\text{Total assets}}$$

Total assets

The competition index moves from 0 denoting lack of competition and 1 denoting maximum competition.

Applying the formula for the twenty-four UMDBs operating in Nigeria, the competitive index ranged between 0.92451497 and 0.99641741.

This translates to the fact that there is competition for deposit mobilisation and selling of banking services to the teeming population that needs banking services. There are some UMDBs that grants housing loan for housing acquisitions not because they had the resources or that they are liquid enough to grant long-term loans, but lending long to be proactive and maintain their market share within the banking industry in Nigeria.

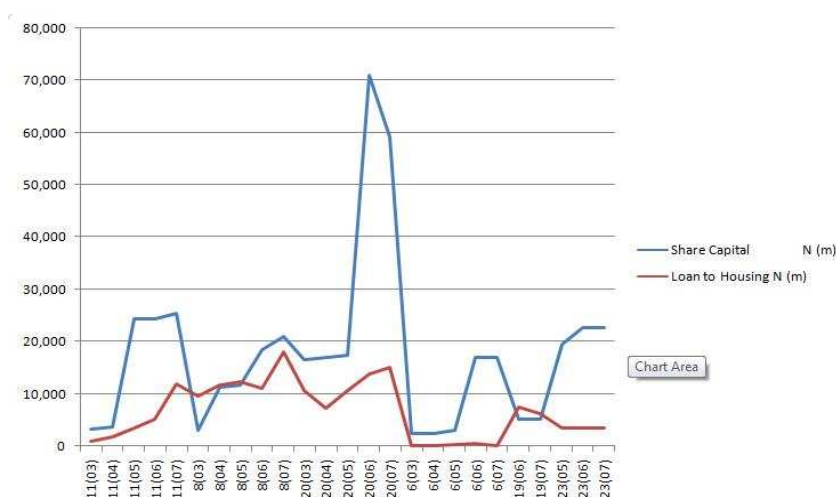
Competition and innovation among institutions ultimately results in greater efficiency (Merton 1995; Merton and Bodie 1995). However, Claessens and Laeven (2004); Aghion et al (2004a, 2004b and 2005) argues that competition has different effects on the willingness of firms to innovate which depends on their level of efficiency. While firms with highest efficiency are spurred by competition to innovate and increase their efficiencies, firms that are far from being efficient are discouraged by competition to innovate. Therefore, Ross (1989) argues that it's the large institutions that force innovation. Sutton (2007) believes that a firm's competitiveness depends not only on its productivity but also on quality of its products. For consumers, they buy and consume products based on price-quality combination and firm's with superior quality products retain some level of market share even with large numbers of competitors (Gorodnichenko et al 2009; Sutton 2007).

Since these banks in Nigeria are operating in a market-based financial system, the competition among the banks at the end of the day would reduce the assumed inefficiencies among the banks and gradually contributes to economic growth (Bhattacharya & Chiesa 1995;

Dewatripont & Maskin 1995; van Thadden (1995). In the next section, the study looks at the effects of increase in capital base on housing loans by the Nigerian banking industry.

### **7.4.3 Effect of Increase in Capital Base and Loan to Housing**

The capital base of any institution is made up of the Share capital and the reserves accumulated over a period of time. If profits are made, the retained earnings in form of reserves increase the capital base of that organisation. If losses are made, the retained earning will be negative and capital base depreciates .



**Fig 7.1: Share Capital and Loans to Housing Trend (2003-2007)**

For Bank (11) was established in 1990, it had a share capital of N3.37billion in 2003 with housing loan of N0.906billion. Between 2003 and 2004, the increase in share capital was not significant but lending to housing increased by 80 percent from N0.906 billion to N1.631billion. In 2005, the bank became a public liability company (PLC) by selling part of its share capital to the public. This resulted in its share capital increasing from N3.673billion to N24.393 billion and lending to housing increasing in absolute term from N1.631billion to N3.426billion. An increase of 110 percent when compared with 2004 figure. Despite its share capital remaining within a range of N25billion, the lending to housing increased by 46

percent between 2005 and 2006, also increase of 137 percent between 2006 and 2007 resulting in a figure of N11.89billion in 2007.

For Bank (8), the share capital increased from N3.163billion in 2003 to N21.036billion in 2007 due to various right issues offered to their existing shareholders. The right issue by a public limited company (PLC) is an offer to its existing shareholders only, without inviting new investors, to buy the stock of the company at a discount. It is considered as a way of saying thank you to the existing shareholders for standing by the company. This way of raising capital might be considered as a cheap way of raising funds but it is used in developed and developing economies. With the increase in the share capital, lending to housing increased from N9.424billion in 2003 to N17.92billion in 2007.

For Bank (20), the share capital increased from N16.49billion in 2003 to N59.2billion in 2007. Between 2003 and 2007, lending to housing increased from N10.6billion to N14.93billion.

Bank (23), started operations in 1945 and a public limited company (PLC). The share capital increased from N19.53billion in 2005 to N22.73billion in 2007. Their lending to housing increased from N3.335billion in 2005 to N3.441billion in 2007.

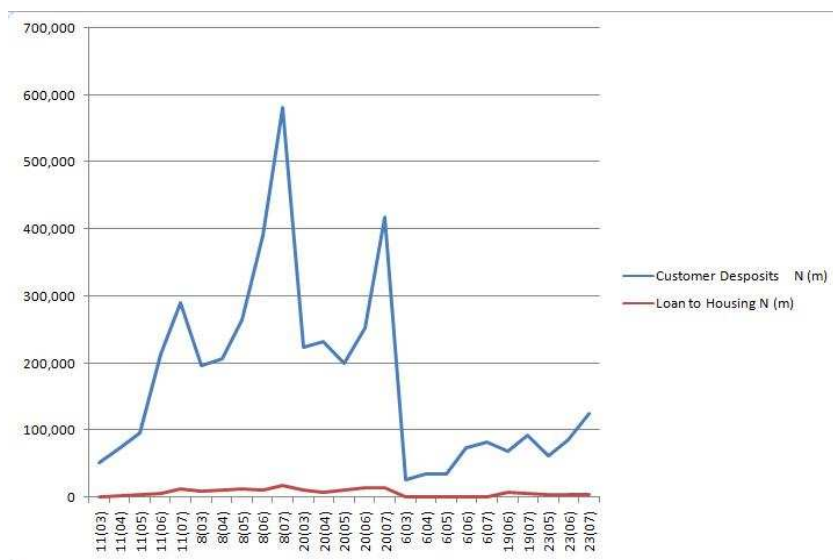
Bank (6) which is a private limited company, despite increases in its share capital from N2.45billion in 2003 to N17billion in 2007, there was no appreciable increase in its lending to housing over that period of five years. However, the other public limited companies had their lending to housing when there is increase in their share capital.

#### **7.4.4 Effect of Increase in Deposit Base and Loan to Housing**

The customer deposit with any financial institution is considered as a liability of the financial institution. The customer's deposit could be classified as demand deposit, savings deposit or



term deposit. The demand deposit has the shortest tenor and it is payable on demand, so it is the most volatile of all types of deposits. As mentioned by Levine (1997), a long-term profitable projects could not be financed with short- term deposit liability, so if the deposits of the banks are short-tenored, it is difficult for the banks to contribute to economic growth.



**Fig 7.2: Deposit Base and Loans to Housing Trend (2003-2007)**

All the banks sampled in Nigeria had their deposit liability profile dominated by demand deposit. Averagely over 50 percent of their deposit liability is demand deposit which is not suitable for financing long-term projects like housing finance.

From Figure 7.2, despite astronomical increase in the deposit base of the banks, it does not translate into lending to housing. When short-term deposits are used to finance long-term assets, there are various risks like liquidity risk and interest rate risk being taken by the lender, which if not well managed can cause problems for the lender.

#### **7.4.5 Interest Rate and Loan to Housing**

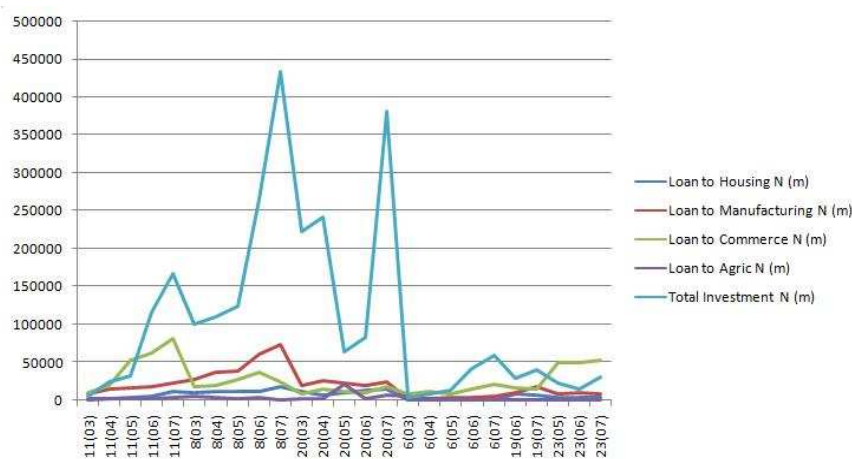
The Loanable Funds theory has been central to the theory of interest rates. The loanable funds approach views the interest rate as being determined by interaction between the supply and demand for loanable funds in the financial market (Philbeam 2005; Nwaoba 2006; Akinwunmi et al 2008a). It is viewed by the theory that investments and savings determine the long-term level of interest rate while the financial and monetary conditions in the economy determines the short-term interest rate.

It was argued by Vatnick (2008) that a lower cost of capital is important for economic growth. A lower cost of capital implies rising investment and induce higher rate of capital accumulation for faster economic growth. However, Nwaoba (2006) analysis showed that the cost of funds are so high in Nigeria which reflects on the nominal interest rate being charged on loans. The cost of funds is influenced by the following factors: *inflation rate, inter-bank funds rate, creditworthiness or risk of the borrower, savings rate, maturity period, cash reserve requirements for banks, liquidity ratio, minimum rediscount rate, growth of bank credit to the economy, growth of money supply, rate of economic growth, loan-deposit ratio of banks, prime lending rate, treasury bills rate and overheads.*

It was highlighted that the cost of operations is a component in the computation of interest rate on lending. The cost of operations includes amount spent on fuel and energy, deficiencies in the infrastructural facilities and the expensive cost of living in the economy. Therefore, when banks in Nigeria are charging between 10&20 percent on loan to housing, they are creating room for default by the borrowers, compared to various cheap mortgage products available in the developed economies. The interest being charged is contrary to the reasonable mortgage rate of less than 14 percent recommended by experts (Weiss, Post and Markery 2002;

Hassanein and El-Barkouky 2009). This anomaly indirectly affects the volume of funds that could be supplied by the UMDBs.

### **7.5 Interlinkages of Lending to Housing, Agriculture, Manufacturing and Commerce.**



**Figure 7.3: Linkages of Lending to Housing, Agriculture, Manufacturing and Commerce (2003-2007).**

As discussed in Section 7.4.4, over 50percent of deposit mobilized by Nigerian banks are demand deposits which are of short-tenor in nature and repayable on demand. When comparative analysis is carried about the utilisation of deposit mobilised by the financial institutions, it is easy to deduce from the graphical illustration that banks invest the deposits in short-term assets.

From Figure 7.3, it can be seen that Bank (11) established in 1990, between 2003 and 2007 invested a large percentage of their deposits on short-term assets. While in absolute term, N11.89billion (9.7%) was given as loan to housing in 2007 out of total loans and advances figure of N113.705 billion, N82billion (72.6%) was extended to commerce (buying and selling). Also, the total investment in short-term government securities reflected a figure of N167.7billion.

For Bank (8), while its share capital and deposit liabilities are increasing, loans and advances figures were increasing towards housing and manufacturing subsector. In absolute terms, there was no appreciable increase in its lending to commerce. Out of total loans and advances figure of N219.2billion in 2007, a sum of N23.6billion (10.5%) of their total loans was extended to commerce and N72.995billion (33.3%) was given as loan to manufacturing and N17.919 billion(8.2%) was given as loan to housing.

For Bank (20), one of the oldest banks in Nigeria, as the liabilities in form of deposits and capital base were increasing, they were also investing in long-term assets. Their lending to housing, manufacturing and agriculture were increasing over the period (2003-2007) without much increase in its lending to commerce. Out of the total loans and advances figure of N149.4billion in 2007, N14.926billion (10.07%) was the outstanding loan to housing, N23.67billion (16.1%) was outstanding for manufacturing. The outstanding figure for commerce was N18billion (12.08%).

For Bank (6), the only private bank sampled, was established in 1990. On the average between 2003 and 2007, about 50 percent of its outstanding loans were extended to the commerce subsector. In 2007, out of total loans and advances N32.54billion, the outstanding figure for commerce was N20.973 (65.6%). This translates to the fact that as this bank is mobilising deposits, a larger percentage of the liabilities were being used to finance commerce.

## **7.6 Summary**

In this chapter, attempt was made to use graphical illustrations to analyse the data collected from the sampled banks operating in Nigeria. There is no point denying the fact that a large share of deposit mobilised by these banks are short-tenured, the old banks have tried their best in contributing to the growth of the productive sector of the economy by lending to those

sectors, in particular housing subsector. The new banks established in the 1990s have concentrated on lending to commerce and improving their profitability. All the same, the banks generally need to do more by providing funding for housing acquisition. Since there is a strong correlation between economic development and the size of the mortgage market, their lending towards housing acquisitions indirectly contributes to economic development.

## **CHAPTER EIGHT**

### **DISCUSSION OF RESULTS**

#### **8.1 Introduction**

In economic transactions, a critical assessment of the supply side of the commercial entity is undertaken when there is demand for those goods and services. When there is no demand for the goods and services, attempts are not made to assess the supply side. The demand for housing finance is a derived demand because individuals are demanding for housing finance not for its sake but for home acquisition. While the aim of the study is to investigate factors affecting housing finance supply, it is important to consider the demand side of housing finance in verifying reasons why housing finance are not being supplied by the financial intermediaries. Could it be that potential borrowers are not approaching the financial institutions to source for housing finance or is it that the lender's requirements are so stringent that individual's cannot meet up with this lender's requirements?

At the time this study was being conceptualised, it was considered necessary and important to obtain information using questionnaire in extracting information from users of housing finance in Nigeria. The information relates to hindrances being encountered by them in accessing housing finance. Having obtained the information through data collection by means of questionnaire survey, the result of the analysis would be used in discussing all factors that affects housing finance demand in Nigeria. Therefore, chapter eight is divided into five sections. Section 8.1 is the introduction to the chapter; section 8.2 discusses the outcome of the data analysis as it relates to the borrower's characteristics in accessing housing finance, which are divided into five subsections. The focus of section 8.3 is on housing finance demand while section 8.4 is on the summary.

#### **8.2 Data Analysis for housing finance demand in Nigeria.**

The combined outstanding mortgage lending by the UMDBs, FMBN and PMIs as at December 2007 stood at N173 billion of the total credit outstanding figure of N4500 billion in the Nigerian banking sector (CBN 2007). This translates to 0.76 percent of the 2007 GDP. However, it is noted by Boleat (2008) that there is a strong correlation between economic development and the size of a national mortgage market

Deng et al (2005) highlighted borrower's income and characteristics such as age, marital status, occupation, job position and education as important indicators to differentiate between high risk and low risk borrowers, these characteristics were adopted for the questionnaire. Four hundred questionnaires were distributed to users of housing finance in the Lagos metropolis within the months of July / August 2008. The users of housing finance were described as individuals that have approached financial institutions to request for housing loans. It is irrelevant whether they obtain the loans or not. Seventy questionnaires were returned, with five questionnaires not properly completed. Therefore, the analysis was based on sixty-five questionnaires, which translates to 16.25 percent response rate. The response rate can be considered to be adequate in that housing finance demand is not the main focus of the study. In studies related to access and usage of finance, to get an accurate picture, a few household surveys is really required to get an accurate picture (DFID 2004 p.6). Again, as mentioned in the limitations to the study, when questionnaires are being distributed in emerging/developing economies, responses are always very low when it relates to information about individuals.

Because tax avoidance is so high in these economies, when a set of questionnaire is requesting for individual's income, the respondents are always very reluctant to answer those questions. It is assumed that when their true income is declared, it might lead into their tax due being re-assessed and they might be asked to pay higher tax.

In the subsections below, the outcome of the analysis is to be discussed based on the independent variables.

### **8.2.1 Marital Status (Question One)**

**Table 8.1: Distribution of Respondents by Marital Status**

**Source: Author's Field Survey, 2008**

<b>Marital Status</b>	<b>Frequency</b>	<b>Responses percentage</b> in
Single	13	20
Married	52	80
<b>Total</b>	<b>65</b>	<b>100</b>

From the field survey conducted as shown in Table 8.1, it is observed that fifty-two out of the sixty-five respondents that were sourcing for housing finance, which translate to eighty percent are married. The remaining twenty percent are singles. This might mean that the married people that are sourcing for finance to acquire housing are doing so for the protection of their family. Out of the sixty-five respondents, there was no divorced, widow or widower sourcing for housing finance.

### **8.2.2: Age (Question Two)**

**Table 8.2: Distribution of Respondents by Age**

**Source: Author's Field Survey, 2008**

<b>Age</b>	<b>Frequency</b>	<b>Responses Percentages</b> in
1-29	-	-
30-39	35	53.8
40-49	25	38.5
50-59	5	7.7
60+	-	-
<b>Total</b>	<b>65</b>	<b>100</b>

From Table 8.2, the need to borrow money for property acquisition is usually high between the ages of thirty and fifty. From the survey conducted in Nigeria, thirty-five (53.8%) of



respondents that have made efforts to raise housing finance are in the age bracket of 30-39 years of age. Twenty-five (38.5%) of the respondents are in the age bracket of 40-49 years of age and five (7.7%) are in the age bracket of 50-59 years of age.

This outcome confirms studies by Haurin, Hendershot and Ling (1987); Deutsch and Tomann (1995); Maki (1993), Duca and Rosenthal (1994) and Bourassa (1995) which suggests that individuals between the ages of 30-50 years are mostly likely to be homeowners. From age of thirty years, workers are in their prime age after learning a trade or completing their education, settle down to raise families and become homeowners. Whether in the developed or the emerging economies, age is an important variable considered by the lenders'. Knowing the age of the potential borrower gives the lender an opportunity to determine the tenure of the lending up to the retirement age of sixty-five for men and sixty for women.

It is not common, though not impossible to find an individual seeking fund for property acquisition at age of sixty years of age. For the survey, there was no respondent over the age of sixty.

**8.2.3: Education (Question Three)****Table 8.3: Distribution of Respondents by Educational Attainment**

Source: Author's Field Survey, 2008

Education	Frequency	Responses in Percentages
None	-	-
Primary	-	-
Secondary	5	7.7
Vocational	-	-
Polytechnic/University	60	92.3
<b>Total</b>	<b>65</b>	<b>100</b>

From Table 8.3, out of the sixty-five respondents, five (7.7%) had secondary education while sixty (92.3%) had Polytechnic / University education. Four hundred questionnaires were sent out, but the responses came only from users of housing finance that had formal education. It means that those who did not have formal education did not bother to give any opinion despite the willingness of the questionnaire administrator to translate to vernacular.

**8.2.4: Employment (Occupation / Job Position) (Question Four)****Table 8.4: Distribution of Respondents by Employment**

Source: Author's Field Survey, 2008

Current Employment	Frequency	Responses in Percentages
White Collar (Civil Servant)	5	7.7
White Collar (Private Company)	50	76.92
Blue Collar (Bricklayer etc)	-	-
Self-Employed	10	15.38
Others	-	-
<b>Total</b>	<b>65</b>	<b>100</b>

Out of sixty-five respondents that responded to the questionnaire, five (7.7%) were civil servants, fifty (76.92%) were working with private companies. Ten (15.38%) were self-

employed, that is working for themselves. There is a linkage between employment level and educational attainment, so these respondents had the urge to express their opinions about sourcing for housing finance. This suggests that the civil servants and workers in the private companies are in better positions to meet the lender's requirements.

### **8.3 Demand for Housing Finance.**

**Table 8.5: Distribution of Respondents by Savings**

**Source: Author's Field Survey, 2008**

<b>Where do you save?</b>	<b>Frequency</b>	<b>Responses in Percentages</b>
Universal Banks	40	61.54
Government Savings Scheme	-	-
Mortgage Institutions	7	10.77
Traditional Savings (Ajo / Esusu)	2	3.08
Others (Shares & Bonds)	12	18.46
Others (Co-operative Societies)	4	6.15
<b>Total</b>	<b>65</b>	<b>100</b>

**Table 8.6: Distribution of Respondents by Sources of Finance (Question Fourteen)**

**Source: Author's Field Survey, 2008**

<b>Sources of Finance</b>	<b>Frequency</b>	<b>Responses in Percentages</b>
Mortgage Institutions	14	18.42
Universal Banks	8	10.53
Relatives and Friends	2	2.63
Personal Savings	20	26.32
Money from Abroad	-	-
Loans from Employers	25	32.89
Sold another house	2	2.63
Private Lender	-	-
Others	5	6.58
<b>Total</b>	<b>76</b>	<b>100</b>

To analyse demand for housing finance in Nigeria, both Tables 8.5 and 8.6 would be discussed together. From Table 8.6, the total frequency figure was seventy-six instead of sixty-five because some borrower's supplemented their source of finance with personal savings.

From the literature, while Ndulu et al (2007) defined access as “ensuring provision of financial services that entail appropriate products, reasonable cost and physical proximity”, Bramley (1993 p.823) looked at access as “the formal rules governing households’ ability to obtain housing. The definition of access ascribed to Ndulu et al (2007) is relevant to the developed economies rather than the emerging economies. Neither of these two definitions was applicable to housing finance accessibility in Nigeria. In Table 8.5, forty (61.54%) of the respondents save with the Universal Banks but only eight (10.53%) were able to raise housing finance (Table 8.6) from the Universal Banks. From Table 8.5, seven (10.77%) of the respondents saves with mortgage institutions but fourteen respondents (18.42%) sourced their housing finance from them (Table 8.6). Why do we have individuals saving with the Universal Banks but could not access housing loans from these institutions? Could it be that their lending conditions are too stringent? Loan provided by employers is becoming a major source of finance for housing acquisition. From Table 8.6, twenty-five respondents (32.89%) raised their housing finance from their employers, though the absolute figure for these loans from employers are not stated.

This class of respondents as shown from Table 8.5 do not patronise the government savings scheme, only two respondents (3.08%) save with traditional savings institution and four respondents (6.15%) are dealing with the co-operative societies. Based on their levels of education, there are savers that believe the unutilized part of their earning are

invested in stocks and shares. There are twelve (18.46%) of the respondents that kept their savings in stocks and shares.

**Table 8.7: Distribution of Respondents by Interest Paid on Housing Finance Loans (Question 15 and 16)**

**Source: Author's Field Survey, 2008**

<b>If Borrowed, at what rate of interest</b>	<b>Frequency</b>	<b>Responses in Percentages</b>
Employers (9%)	25	53.19
Mortgage Institutions (14%)	14	29.79
Universal Banks (20%)	8	17.02
<b>Total</b>	47	100

From Table 8.7, twenty-five (53.19%) of the respondents borrowed from their employers at interest rate of nine percent and fourteen (29.79%) of the respondents were assisted by mortgage institutions at interest rate of fourteen percent. Only eight (17.02%) of the respondents were able to raise housing finance from the Universal Banks (UMDBs).

From the table, the universal banks are having the highest interest rate charged on their lending compared with the mortgage institutions and the employers. This is line with what literature says in section 7.5.5 as analysed by Nwaoba (2006). The cost of funds are so high which reflects in the nominal interest rate charged, in particular with the Universal Money Deposit Banks (UMDBs) in Nigeria.

When cost of funds is being worked out or computed, inflation rate, inter-bank funds rate, savings rate, cash reserve requirement (CRR), liquidity ratio, treasury bills/certificate rates and cost of operations are all components in computation of interest rate. The arbitrary increase in the prices of petroleum products, in particular the price of diesel which the financial institutions used in driving their generating set reflects on the

cost of operations and indirectly on the interest rate being charged by the financial institutions.

The rate at which mortgage institutions accessed the National Housing Funds (NHF) might be one of the factors contributing to the low interest rate of nine percent being charged by these institutions. By regulation, they are not supposed to make more than four percent spread on funds accessed through the NHF. This means that if they are charging their customers nineteen percent, they must have accessed the funds at interest rate of fifteen percent. The spread of four percent takes care of salary payment; cost of running their branch offices and other miscellaneous expenses.

From further analysis, it could be deduced that cost of borrowing from employers of labour is the lowest at nine percent and is becoming a major source of financing for housing acquisition, at least in absolute terms. The other contribution of employers of labour is to be considered using repayment periods and the percentage of loan request that were granted.

**Table 8.8: Distribution of Respondents by Tenure of Lending (Question Nineteen)**

Source: Author's Field Survey, 2008

Repayment Period of Loans	Frequency	Responses in Percentages
Less than 24 months	-	-
25-48 months	15	23.08
49-96 months	22	33.85
97-144 months	24	36.92
More than 144 months	4	6.15
<b>Total</b>	65	100

**Table 8.9: Distribution of Respondents by Percentage of Request Granted (Question Twenty Five)**

Source: Author's Field Survey, 2008

What Percentage of Housing Loan request was granted?	Frequency	Responses in Percentages
50 Percent	7	12.96
60 Percent	9	16.67
75 Percent	11	20.37
100 Percent	27	50
<b>Total</b>	<b>54</b>	<b>100</b>

**Table 8.10: Distribution of Respondents by Monthly Income (Question Thirty-Two)**

Source: Author's Field Survey, 2008

Income	Frequency	Responses in Percentages
0 – N9,999	-	-
N10,000 – N19,999	-	-
N20,000 – N29,999	3	4.62
N30,000 – N39,999	18	27.69
Others	44	67.69
Over N100,000		
<b>Total</b>	<b>65</b>	<b>100</b>

From Table 8.8, fifteen (23.08%) of the respondents had housing loan with a tenure of 25-48 months and twenty-two (33.85%) of the respondents had facilities with a tenure of 49-96 months. Twenty-four (36.92%) of the respondents secured housing finance for a tenure of 97-144 months with four (6.15%) of the respondents had tenure of more than 12 years.

From Table 8.9, there are fifty-four respondents made up of fourteen borrowers from mortgage institutions, eight borrowers from Universal Banks, two borrowed from relatives, twenty-five got loans from employers and five borrowed from other sources. Seven (12.96%) of the respondents secured only fifty percent of what they requested for from the

lender and nine (16.67%) of the respondents got sixty percent of their requests. Eleven (20.37%) of the respondents obtained seventy-five percent of their request while twenty-seven (50%) of the respondents secured all what they requested.

Table 8.10 depicts the distribution of respondents by monthly income. Forty-four (67.69%) of the respondents earn monthly income in excess of N100,000 while eighteen (27.69%) earn monthly income in the range of N30,000 and N39,999 with the remaining three (4.62%) earn between N20,000 and N29,999. From literature review, income of the borrower is an important determinant of the amount a prospective borrower can access for housing finance. The amounts to be loaned out are usually calculated in multiples of the annual income. Even, it is an important variable for the lenders when the housing affordability is being worked out.

There are instances where employees of corporations and big companies enjoyed housing loan facilities from their employers. At that, these type of facilities are short-tenured in nature in that they are usually extended for less than ten years and are considered as informal lending. This might translate to the fact that some of the intending borrowers are required by the UMDBs to deposit a substantial percentage of the cost of the property. Even in the developed economies where there is job security, down payment for mortgage loans ranges between five and twenty percent. However, with the low income being earned by the intending borrowers, it might be difficult for them to meet up with the requirements of these financial institutions.

In Chapter Four, it was noted that high down-payment is now an important determining factor of when first time buyer can start climbing the property ladder. If high down-payment is an inhibiting factor for property acquisition in developed economies as shown in the studies by Ortala-Magne and Randy (1998 & 1999), then in a country like Nigeria,



people would be discouraged totally from making efforts to approach the financial institutions in sourcing for housing loans. The minimum down-payment or borrower's contribution / equity vary from one lending institution to the other. The so-called government named State Property Development Corporations usually request for borrower's equity participation in excess of 20 percent of the total cost of the property being acquired, which in most cases must have been spent by the potential borrower before being granted the loan.

The situation of housing finance demand in Nigeria is typical of what is happening in other emerging economies. The shallowness of its financial system until year 2005, when the regulatory capital requirement was increased to a minimum of US\$200 million, which has hitherto resulted in limited access to financial services. This inadequacy has led to low- and middle-income earners being denied of credit facilities due to their inability to meet the stringent requirements of suppliers of finance (Roy 2007 and Renaud 2008). However, the information theories of credit noted that the large volume of loans could be extended to firms and individuals, if these financial institutions can predict the probability of loan repayment by their customers. The volume of credit in a country like Nigeria largely depends on the existence of legislation that protects creditor's rights and the timing of procedures that lead to repayment.

There is no denying the fact that most of these financial institutions apply the orthodox approach of allocating funds for housing based on "affordability" theory. Bramley and Karley (2005); Karley (2008) consider housing affordability as the ability of household to meet the monthly mortgage or rent payment aggregated as a third of the total household income. In Moss (2003), a study of housing finance systems in four African countries of South Africa, Nigeria, Ghana and Tanzania, it was noted that the main problem that

eliminates low-income earners from the housing ladder is affordability because of their low income. Bramley (1993) argued that affordability is not only an issue in emerging economies; it has been a requirement that limits access to owner-occupation for new households throughout England.

Usually, “fixed annuity” method of repayment being applied has hindered mostly low and medium-income earners from accessing loan for housing acquisitions (UNCHS 1995a). This is more relevant to self-employed individuals that might be having a low swing in their income and might not be able to meet up with their monthly financial commitments.

### **Summary**

The aim of this study is to investigate factors affecting housing finance supply in Nigeria. However, with the questionnaires completed by users of housing finance, there were revelations about the situations in the supply of housing finance. Housing finance is not only about extending housing loans but also to mobilise resources for economic growth. A substantial percentage of the respondents are keeping accounts with either the UMDBs or the mortgage institutions which is a way of mobilising resources. But a low percentage of the respondents could access housing finance from these financial institutions.

One might conclude that few borrowers have approached the UMDBs to request for housing finance due to various factors. These factors might include cumbersomeness of lenders’ requirements which Ojo (2005) stated as presentation of certificate of occupancy (title deed to the land), affordability criteria and repayment criteria. In recent past, no literature has ever considered the contributions of employers of labour in the provision of housing finance.

Since the provision of housing finance by employers of labour is outside the orbit of government policies either monetary or fiscal, it is considered as informal form of housing

finance. Be as it may, they have substantially contributed to the provision of housing finance, at least based on the sample population considered and at the cheapest cost (low interest rate).

## **CHAPTER NINE**

### **REVIEW AND VALIDATION OF HOUSING FINANCE SUPPLY MODEL FOR NIGERIA**

#### **9.1 Introduction**

In undertaking the last objective of this study, this chapter is devoted to development and test of model for housing finance supply in emerging economies using data collected from Nigeria. While carrying out the descriptive analysis of data collected from the case study country – Nigeria, it was mentioned in (section 6.2) that there has not been any systematic analysis of the depth of housing finance in a number of countries. Various studies in the area of housing finance have been descriptive in nature (Warnock & Warnock 2008) and they have all lacked formal empirical analysis. Therefore, this research seeks to contribute to the empirical analysis of housing finance supply in the emerging world in an effort to bridge this gap.

The chapter is therefore divided into seven sections. Section 9.1 is the introduction while section 9.2 deals with the review of conceptual model for assessing factors affecting housing finance supply in emerging economies. While the testing of the model is devoted to section 9.3 using data collected from Nigeria, section 9.4 discusses the results of the test. Having adopted mixed method research approach, section 9.5 focuses on the validation process for the model. Section 9.6 looks into the application and merits of housing finance supply model for Nigeria and section 9.7 discusses the summary of the chapter.

In the next section, the conceptual model for assessing factors affecting housing finance supply in Nigeria would be discussed.

## **9.2 Conceptual Model**

Hancock and Wilcox (1993; 1994) posited that individual bank's desire of holding assets in any given category depends on several factors coupled with its preference for risk and return; its perception of risks; the risks of, returns on, and other characteristics of alternative assets and liabilities available to it; its long-term customer relationships and the cost of lending. The relationship is approximated by a function that is linear in parameter but may include non-linear transformations of variables:

$$A_i = f(X_1 + \dots + X_m)$$

Where  $i = 1$  to  $m$

The exogenous characteristics of the liability and capital markets for a bank can also affect its long-term asset position (Hancock and Wilcox 1993; 1994). These characteristics are so important because liabilities and even capital are in different forms. In the case study country – Nigeria, for example, the tenor of the deposit liabilities which is averagely about 50 percent on demand for each bank, contributed immensely to the inability of these institutions from granting long-term lending. Due to short-term nature of their deposit liabilities according to commercial bank loan theory, they tend to lend short rather than lending towards housing or for financing plant and machinery because they are considered as illiquid (Elliot 1984; Ritter & Silber 1986 as cited by Soyibo 1996). Furthermore, Brainard and Tobin (1968) observed that time and saving deposits are less volatile than demand deposit and they may be adventurously invested. Again, when banks are risk-averse, there is the tendency for it to hold assets which have low default rate and earn less income. In Berger et al (1999) argument, some studies have found that bank managers act in a risk averse way by trading off between risk and expected return which might result in

keeping additional costs expended to keep risk under control (Hughes et al 1996 & 1997; Hughes and Mester 1998).

As earlier on discussed in Chapter 2, debt finance for housing are usually tenured facilities. Term-loans vary from short-term through long-term, which might have tenure of between 10 to 30 years (Cranston 2002; Heffernan 2003). When bank facilities is about to be granted to customers, there are conditions to be met by the bank customer. These include provision of security in excess of the amount to be borrowed, ability to repay – the borrower is expected to have a source of income and tenor of the lending amongst other conditions (Mayes 1979; Cranston 2002 and Heffernan 2003). The financial intermediaries providing mortgage facilities also wish to maximise mortgage advances subject to satisfactory reserve and liquidity ratios.

In lending by financial institutions, there are two aspects to their lending operations. The ability of the financial institutions to lend determined by the strength of their balance sheet. The theoretical framework was presented in Figure 4.2 p.110. It is the liability side of their balance that determines the ability of the financial intermediaries to provide long-term funding for housing finance in Nigeria. The tenor of the deposit liabilities, which is averagely about 50 percent demand for each bank (see Appendix V), has contributed immensely to the inability of these institutions from granting long-term lending.

The financial institutions had unique characteristics of bringing together the surplus units and deficit units for entrepreneur activities. Therefore, the willingness of the financial institutions to lend as risk managers depends on very strict conditions. It is only customers that could meet up with their strict conditions that can access finance for house acquisition. The mortgage instruments used in the developed economy are more sophisticated than

what is applicable in most of the emerging economies. However, the banking principles remain the same.

In the next section, discussion is centred on demand and supply sides of housing finance in Nigeria.

### **9.2.1 Demand and Supply sides of Housing Finance.**

The demand and supply of housing finance are determined by various factors. The ability of financial institutions to lend for housing (supply of housing finance) determines the quantity of housing finance that could be supplied for house acquisitions. If the identified factors, which are components of the liability side of the balance sheets are dwindling, the availability of housing finance will be reduced. Ghosh and Parkin (1972) who presents a complete model of building society behaviour believes that the faster reserves grow, the faster can total assets grow and the desire is there for the Universal banks to accumulate reserves. If the reserve is accumulating, therefore the capital base of the banks would be growing and the ability to lend will be there to make more profit.

It is generally known that capital adequacy rules impact on the bank behaviour (Dewatripont and Tirole 1994; Freixas and Rochet 1997; Chiuri et al 2002), There are two ways by which these rules affects bank behaviours. Firstly, capital adequacy rules strengthen bank capital and it improves the resilience of banks to negative shocks and secondly, capital adequacy affect banks in their risk taking behaviours. Therefore, Kochi (1988), Betubiza and Leathan (1995) and Basis (2004) argued that banks with good capital base has the capacity to absorb risk. These types of risk could be liquidity, mismatch, systemic or credit risk. Berger et al (1995) differentiates between banks market capital requirement, which are capital ratio that maximises the value of the bank and the regulatory capital requirement, which is US\$200 million minimum capital requirements for

all Universal Banks operating in Nigeria as set by the Central Bank of Nigeria (CBN). For instance, any surge in deposit outflow can create an immediate liquidity problem for an institution. Betubiza and Leathan (1995) are of the opinion that there are positive and negative relationships between deposits and loans generally. What is relevant to this argument is the positive relationship. Therefore, the positive relationship between deposits and loans is that time and savings deposits enhance the stability of loanable funds. In Nigeria, one of the problems with the lending abilities of the banks is that over 50 percent of their deposit liabilities are demand deposits, which are not supposed to be lent out on long-term basis to avoid mismatch risk (see Appendix V)

As argued earlier on that financial institutions with good capital base could withstand risk, apart from mismatch risk, another form of risk is the systemic risk. As argued by Berger et al (1995), when there are news that some banks are unable to meet their immediate financial obligations, this sort of information might create problems and destructive panic. Guttentag and Herring (1987) observed that interbank markets may even be another channel through which problems of one bank might be transmitted to another bank.

On the demand side of housing finance, the most important factor being considered by banks is the ability of the borrower to repay the money borrowed. This can be secure, if the borrower is in employment at the point of borrowing. Considering the macroeconomic situations in the emerging economies and in particular Nigeria, there is no way anybody can predict how long a borrower would be in employment. In developed economies, total sum borrowed is usually restricted to three to four times the applicant's salary (Ball 2003; Warnock & Warnock 2008).

While marital status is of importance in the developed economies, in the case study country – Nigeria, an applicant is mostly considered as an individual and the wife's income



does not carry any weight. The other factors considered is the Age and the Loan to Income ratio etc

To have insight into the demand and supply sides of housing finance, questionnaires were distributed to both suppliers and users of housing finance in Nigeria. The responses from them serves as data input for the model incorporating both demand and supply of housing finance in Nigeria.

### **9.2.2 Multiple Regression**

The methodological framework utilised in this study is based on Multiple Regression Model. Multiple regression as an extension of bivariate regression, where several independent variables are combined to predict a value for the dependent variable. Pallant (2006) argued that it is used when the predictive ability of a set of independent variables on one continuous dependent variable is to be explored.

The adoption of multiple regression technique rather than other possible analysis method like multivariate analysis of variance is due to the fact that it can be used for data in which the independent variables are correlated with one another and even to an extent with the dependent variable. It can show at a glance, changes in quantitative terms and effects that each independent variable has on the dependent variable. Because it not only provides relationship between variables but also the magnitude of the relationships, multiple regression is one of the most widely used statistical techniques in social sciences (Mason and Perreault 1991; Lunenburg and Irby 2008).

Multivariate analysis of variance was considered not suitable because it deals in situations where there are several dependent variables. However, in this case, we have a single dependent variable and several independent variables – the general linear model is

considered favourably to detect group difference on a single dependent variable (Bray and Maxwell 1995).

Using loan to housing (housing finance supply) as the dependent variable, it could be deduced at a point, the effects of independent variables like Reserves, Deposit Base, Cash Reserve Requirements etc has on loan to housing.

The basic model is as shown below:

$$Y = a + \sum_{i=1}^n b_i x_i + \varepsilon \quad (1)$$

$$Y = a + b_1x_1 + b_2x_2 + b_3x_3 + \dots + b_nx_n + \varepsilon \quad (2)$$

Where:

$Y$  is the parameter to be estimated, that is, predicted value of dependent variable

$a$  is constant and the intercept of the regression, equal to value of  $Y$  when all value of  $x$  are zero.

$b_i$  the partial regression coefficient, that is, coefficient assigned to each independent variable.

$x_i$  the predictor variables (independent variables).

The regression has that goal of arriving at the set values for  $b_i$  called regression coefficients.

The above equation can be written in another form:

$$Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \dots + \beta_k x_k + \varepsilon \quad (3)$$

Where:

$x_1, x_2, x_3, \dots, x_k$  are the independent variables.

$\varepsilon$  the difference between the predicted and observed

value of Y for the  $i$ th subject.

$b_0$  is the constant term

$b_1, b_2, b_3, \dots, b_k$  are the regression coefficients to be estimated.

### **9.2.3 The Assessment Model**

The conceptualisation of a model in this chapter is to assist in the analysis of the relationship between loans to housing (housing finance supply), being the dependent variable, and other factors that may affect it. The methodology adopted need to capture all the variables. These variables include share capital, reserves, customers deposit liabilities, other liabilities, loan to manufacturing, loan to commerce, loan to agriculture, total investment, cash reserve requirements, fixed assets, total loans and advances and total bank assets.

The loans extended by the UMDBs to manufacturing, commerce and agriculture are included amongst the independent variables in that when the banks are not lending to these other economic sectors, is that scenario having effect on lending to housing.

The supply of housing finance (loan to housing) function is therefore expressed as:

$$SHF = f (SH+R+DL+OL+LM+LC+LA+TI+CRR+FA+TL\&A+TBA) \quad (4)$$

SHF = Supply of Housing Finance

SH = Share Capital

R = Reserves

DL = Deposit Liabilities

OL = Other Liabilities

LM = Loan to Manufacturing

LC = Loan to Commerce

LA = Loan to Agriculture

TI = Total Investments

CRR = Cash Reserve Requirements

FA = Fixed Assets

TL&A= Total Loans and Advances

TBA = Total Bank Assets

#### **9.2.4 Dependent Variable**

The dependent variable, housing finance supply is measured by the volume of housing loan extended by the UMDBs within the Nigerian context.

#### **9.2.5 Independent Variables (Supply Side)**

The **equity base** is the most important form of funding for a business because it is internally generated by the business owners and does not attract any form of cost. Unlike

borrowing, which attracts interest payments on monthly, quarterly or annual basis as the case may be, it is interest free. The equity base is made up of capital and reserves.

When a business is about to commence, **capital** is raised from investors either through public offering or through private placements. Capital are mostly called equity because the holders always have the right to liquidate or referred to as long-term debt where the right of liquidation accrues to holders only when there is default (Diamond and Rajan 2000). Berger et al (1995) considers equity capital as the residual claim on a bank, that is, the value of obligations of others to be paid to the bank plus the value of any other tangible and intangible assets less the value of obligations to be paid by the bank. It is part of the capital that is used to acquire assets for the business to start operation in earnest after the necessary approval has been sought and obtained from the authorities. As the business grows and profits made, part of the profit is being retained as source of finance for expansion. In Nigeria, there is a statutory regulation that if a publicly quoted company makes a profit in a financial year, a certain percentage of the profit after tax should be retained in the business in form of reserve.

Another important independent variable is the **deposit liabilities** of the UMDBs. The deposit liabilities are like the working capital for the banks and there is always intense competition in mobilising deposits by the UMDBs. Usually, in an effort to have an edge on other competitors, these UMDBs use different types of strategies to woo customers like payment of high interest rates on deposit. The ratio of a bank's time and savings deposits to total deposits represents the proportion of total deposits that are sensitive to interest rate changes. While the demand deposit component is free of interest payment, it is volatile in that withdrawals could be made on demand. Therefore, it is not appropriate to extend long-

term loan with deposits of this nature. The alternative strategy for the UMDBs is to source long-term funding by developing mortgage instruments for mobilising long-term liabilities.

**Other liabilities** are considered as outstanding financial obligations that are not yet due. These are made up of outstanding tax liabilities or deferred taxation, dividend payables, financial instruments issued but not due for payment and borrowings from economic agencies like European Investment Bank (EIB), International Finance Corporation (IFC) and World Bank. Due to the long nature of these liabilities, they are suitable for housing finance purposes. Many of the Nigerian UMDBs are using facilities from IFC to fund housing finance with the assets matched against the liability to avoid capital and mismatch risks.

**Loan to Manufacturing, Loan to Commerce and Loan to Agriculture** are considered as independent variables. When UMDBs are having deposit liabilities, on which interest are paid, they source for investment outlets which would yield income. The deposit liabilities, depending on their tenures are given out as loans and advances. Therefore, the UMDBs have the alternatives of either lending it out for housing acquisition, manufacturing, commercial or agricultural purpose.

**Total Investment** as independent variable reflects in the balance sheets of UMDBs as funds invested in tradeable securities like company shares and stocks, government securities and bonds. These government securities are made up of treasury bills with maturity tenor of 90days and treasury certificates with tenor of between one and two years. The government securities are sold by the Central Bank of Nigeria (CBN), through Open Market Operations (OMO) which is a major tool for liquidity management. The government securities are sold to mop up excess liquidity in the economy and at times to raise short-term fund for government. The UMDBs can even buy government securities

through the discount window at the CBN to meet up with their liquidity ratio calculations. In an effort to revive the economy, the CBN reduced the liquidity ratio from 40 percent to 30 percent in late September 2008 (Subair and Omankhanlen 2008). The purchases are undertaken through the standing lending and deposit facilities introduced in December 2006 to replace repurchase agreement as complement to other liquidity management instruments.

Again, both the Federal Government of Nigeria (FGN) and the state governments are now selling bonds to finance infrastructural and other long-term projects. In January 2009, the Lagos State Government is raising N275 billion through bond sales to finance infrastructural developments and in June 2008, the FGN raised N47.2 billion for housing finance (Onyebuchi 2008). These investments in bonds are considered as liquid assets in the calculation of liquidity ratio and actively traded at the Nigerian Stock Exchange (NSE) (CBN 2007).

**Cash reserve requirement (CRR)** like liquidity ratio is used as instrument of monetary policy. As instrument of monetary policy, the reduction in reserve requirement allows the monetary authorities to expand money supply and lower interest rates and improve the safety and soundness of the depository institutions (Hein and Stewart 2002). As argued by Pilbeam (2005 p.437), since financial institutions have liquid liabilities (deposits) and relatively illiquid assets (loans) it is mandatory to have regulations that ensures unnecessary problems does not arise due to insufficient liquidity to meet depositor's cash demands. The cash reserve ratio is calculated by setting aside a fixed percentage, now three percent, of the total deposit liabilities of a UDMB and kept in an account with the CBN attracting minimal rate of interest. However, whenever these financial institutions encounter cash shortages, they can borrow from the CBN at penal rate of interest (in

Nigeria- it is at the MRR, in the USA-it is at the Federal Funds rate and in the UK-it is the base rate). The bank's total deposit liabilities are defined as the demand, savings and time deposits of both private and public entities, certificates of deposits and promissory notes held by non-bank public and other deposit items (NDIC 2005). This deduction reduces the ability of these banks to grant loans and advances, it is therefore one of the independent variables that is being adopted for the model.

However in a bid to revive the economy, the CBN announced in late September 2008 reduced the CRR from four percent to two percent (Subair and Omankhanlen 2008).

**Fixed Assets** also is considered an important independent variable. As mentioned earlier on, there is a correlation between the capital and the amount spent on fixed assets. So also, when a banking business commences, after the acquisition of fixed assets, lending is considered as the next assets to be considered. Therefore, there is correlation between fixed assets and loans to housing.

**Total Loans & Advances** is another of the independent variable. If a UMDB is given out one thousand naira as total loans and advances for a financial year, the amount to be allocated to loans to housing is derived from the total loans and advances. Therefore, there is correlation between total loans and advances and loans to housing.

**Total Bank Assets** is the last independent variable being considered. As the loans to housing in increasing when the resources are there, so also is the total bank assets increasing. Like the other two independent variables (Fixed assets; total loans and advances), there is correlation between total bank assets and loans to housing.

Having described the twelve independent variables for the model, we proceed to model testing in the next section of the chapter.



### **9.2.6 Pearson Product-Moment Correlation (r)**

Pearson product-moment correlation (r), as an example of correlation coefficient, gives the numerical summary of the direction and strength of the linear relationships between two variables. Since explanation needs to be given for the possible relationship between the dependent and independent variables, the statistical association between the variables has to be measured. The Pearson Product-Moment Correlation (r) is the most commonly applied correlation coefficient used in measuring a linear association and it is therefore adopted in this study to build the framework of the conceptual model.

Pearson product-moment correlation coefficient (r) ranges from -1 to +1. The indication is that there could be a positive correlation or a negative correlation. A positive correlation exists when dependent and independent variables move in the same direction, that is, when one variable increases and other variable also increase. There is negative correlation when one variable increases and the other variable decreases.

Without taken cognisance of the sign, the strength of the relationship could be observed when figures are taken in absolute term. If a correlation of zero is observed, there is no relationship between two variables. However, a perfect correlation of -1 or +1 indicates that the value of one variable can be determined by knowing the value of the other variable.

### **9.2.7 Multicollinearity**

Another important issue in multiple regression analysis is the presence of multicollinearity. There is no precise definition of collinearity firmly established in the literature (Mason and Pierreault 1991). Collinearity is agreed to be present if there is an approximate linear relationship among some of the predictor variables in the data. This refers to the

relationship among the independent variables and it exists when the independent variables are highly correlated ( $r = 0.9$  and above) (Pallant 2007; Tabachnick & Fidell (2007). Multicollinearity makes it difficult to determine the contribution of each independent variable (Hair et al 1998).

#### **9.2.8 Selection of Variables**

We have three methods of selecting variables in multiple regression analysis – which are forward selection / hierarchical, forced entry and stepwise selection.

In forward selection / hierarchical approach, the equation starts out empty with the independent variables added one at a time. The predictors are added based on past work and which order to enter predictors into the model (Field 2000). However, the most important or influential predictors are entered first.

In forced entry approach, all predictors are forced into the model simultaneously (Field 2000; Tabachnick & Fidell 2007). In forcing the predictors into the model at once, there must be good reasons for choosing the included predictors. This form of approach is best suited for exploratory model building where there has not been previous study. Therefore, the forced entry approach was adopted for this study.

The stepwise method is a compromise between two procedures discussed earlier on. The variables are added or removed depending on the extent to which the additions or removal will increase R-squared. The method finds the best combination of variables to maximise R-squared (Field 2003; Tabachnick & Fidell 2007). The decision about the variables to be included will be based on the slight difference in their semi-partial correlation.

### **9.3: Preliminary Analysis**

#### **9.3.1 Data Exploration**

Before the model testing commences, it is very important to test for the normal distribution of the sample data having adopted statistical method which requires parametric data. The **Kolmogorov-Smirnov** test was found to be non-significant at  $p > 0.05$ , that is, the distribution of the sample is not significantly different from normal distribution.

The Kolmogorov-Smirnov test compares the set of scores in the sample to a normally distributed set of scores with the same mean and standard deviation (Field 2000). It is an objective test to decide whether or not a distribution is normal. However, if  $p < 0.05$ , then the distribution is considered to be significant and different from a normal distribution.

When the distribution is not normal, it is either positively skewed (when most of the respondents record low scores on the scale) or negatively skewed (when most scores are at the high end). Since most parametric statistical tests assume normally distributed scores, in case of skewed distribution, it is either to abandon parametric statistics or have the variables transformed (Fogler & Radcliffe 1974; Pallant 2007; Tabachnick & Fidell 2007).

#### **9.3.2 Scatter plot of aggregate variables**

After data exploration, a measure of the relationship of the variables becomes very important in order to have a robust model. A scatter plot tells us whether there is a relationship between the variables, what type of relationship it is, if at all and whether any case are markedly different (outlier) from the others (Field 2000). The scatter plot could be simple scatter plot, overlay scatter plot, matrix scatter plot or 3-D scatter plot.

The scatter plot provides information on both the direction and the strength of the relationship. This enables the researcher to check the violation of the assumptions of linearity and homoscedasticity. A scatter plot of perfect correlation ( $r = 1$  or  $-1$ ) would be a

straight line and a scatter plot with no pattern evident ( $r=0$ ), would be a circle of points. There is *low correlation*, if data points are spread all over the place and in case of *strong correlation*, points are neatly arranged in a narrow cigar shape.

### **9.3.3 Assumptions for regression analysis**

When conclusions are to be drawn about a population on the basis of regression analysis carried out on a sample of that population, there are several assumptions that must be taking into consideration and satisfied to allow for the statistical validity of the findings (Makridakis and Wheelwright 1989; Berry 1993; Field 2000), which are as follows:

- Variable types: The predictor (independent) variables and the outcome (dependent) variables must belong to the same class of measurements either quantitative or continuous;
- Linearity – This translates to the fact that the mean values of the outcome variable for each increment of the predictors lie along a straight line. There is an implication that if a non-linear relationship is modelled using a linear model, there is a limitation to the generalization of the findings;
- Independence – All values of the outcome (dependent) variable are independent, that is, each value of the outcome variable comes from a separate subject;
- Evidence of homoscedasticity – constant variance of the regression error, that is, the residuals at each level of the predictors should have the same variance. If the variances are not equal, it is considered to be *heteroscedasticity*;
- Independent errors – When two observations are made, the residuals should be uncorrelated, which is considered as lack of *autocorrelation*; and

- No perfect Multicollinearity – There should not be perfect linear relationship between two or more predictors. In checking for multicollinearity, the following checks must be undertaken:
  - Check whether the largest VIF is greater than 10, if yes there is cause for concern (Myers 1990; Bowerman and O’Connell 1990).
  - Check whether the average VIF is substantially greater than 1, if yes the regression might be biased (Bowerman and O’Connell 1990).
  - There is an acute problem if tolerance is below 0.1
  - Also, tolerance below 0.2 is a sign of potential problem (Menard 1995).

#### **9.3.4 Descriptive Statistics of the Data**

**Descriptive Statistics**

	Mean	Std. Deviation	N
Share Capital N (m)	17817.2400	16396.40130	25
Reserves	18251.9200	13606.96398	25
Customer Desposits N (m)	174953.4800	1.38730E5	25
Other Liabilities N (m)	44575.1200	40549.68130	25
Loan to Housing N (m)	6638.1200	5397.61524	25
Loan to Manufacturing N (m)	20009.6400	17235.32306	25
Loan to Commerce N (m)	26513.8000	20306.68878	25
Loan to Agric N (m)	3288.6000	4075.58916	25
Total Investment N (m)	105672.0800	1.18048E5	25
CRR	7765.2000	5920.24852	25
Fixed Assets	9965.1200	6016.35188	25
Total Loans & Advances	72980.7600	50987.84750	25
total bank assets	287595.8400	2.22562E5	25

**Table 9.1: Descriptive Statistics of Participating Variables (Dependent and Independent)**

**Table 9.2: Correlation Matrix of Participating Variables (Dependent and Independent Variables)**

		Share Capital N (m)	Reserves	Customer Deposits N (m)	Other Liabilities N (m)	Loan to Housing N (m)	Loan to Manufacturing N (m)	Loan to Commerce N (m)	Loan to Agric N (m)	Total Investment N (m)	CRR	Fixed Assets	Total Loans & Advances	total bank assets
Share Capital N (M)	Pearson Correlation Sig. (2-tailed)	1.000												
Reserves	Pearson Correlation Sig. (2-tailed)	.305 .138	1.000											
Customer Deposits (m)	Pearson Correlation Sig. (2-tailed)	.484* .014	.897** .000	1.000										
Other LiabilitiesN(m)	Pearson Correlation Sig. (2-tailed)	.529** .007	.538** .006	.621** .001	1.000									
Loan to Housing N (m)	Pearson Correlation Sig. (2-tailed)	.506** .010	.851** .000	.889** .000	.749** .000	1.000								
Loan to Manufacturing N(m)	Pearson Correlation Sig. (2-tailed)	.162 .440	.893** .000	.885** .000	.513** .009	.795** .000	1.000							
Loan to Commerce N (m)	Pearson Correlation Sig. (2-tailed)	.186 .373	-.080 .703	.139 .506	-.086 .683	.049 .815	.079 .708	1.000						
Loan to Agric N (m)	Pearson Correlation Sig. (2-tailed)	.094 .654	.174 .405	.182 .385	.651** .000	.292 .156	.119 .569	-.114 .586	1.000					
Total Investment N (m)	Pearson Correlation Sig. (2-tailed)	.409* .042	.825** .000	.937** .000	.484* .014	.778** .000	.782** .000	.028 .896	.087 .680	1.000				
CRR	Pearson Correlation Sig. (2-tailed)	.218 .295	.664** .000	.692** .000	.788** .000	.780** .000	.738** .000	-.059 .778	.462* .020	.592** .002	1.000			
Fixed Assets	Pearson Correlation Sig. (2-tailed)	.793** .000	.666** .000	.827** .000	.743** .000	.830** .000	.538** .006	.226 .278	.324 .114	.741** .000	.574** .003	1.000		
Total Loans & Advances	Pearson Correlation Sig. (2-tailed)	.525** .007	.872** .000	.964** .000	.570** .003	.845** .000	.891** .000	.248 .232	.133 .527	.851** .000	.629** .001	.800** .000	1.000	
total bank assets	Pearson Correlation Sig. (2-tailed)	.651** .000	.824** .000	.930** .000	.838** .000	.915** .000	.761** .000	.042 .842	.386 .056	.833** .000	.743** .000	.917** .000	.892** .000	1.000

\*. Correlation is significant at the 0.05 level (2-tailed).

\*\*. Correlation is significant at the 0.01 level (2-tailed).



Since the interval scale is used in this study like other quantitative measurements in social sciences, the mean is mostly used as measure of central tendency. In the ordinal scale, the median is used as the measure of central tendency and the mode adopted as measure of central tendency when the data represents a nominal scale. Therefore, the mean is calculated for each of the independent variables as shown in Table 9.1

Table 9.2 reflects the Correlation Matrix of the participating variables (dependent and independent). The values for correlation coefficient are all 1.00 along the diagonal of the regression matrix. The correlation among some of the independent variable is high which is termed as multicollinearity. There is multicollinearity between Total Investment, Total Loans and Advances, Total Bank Assets and Customer Deposits and are identified when the Pearson Correlation ( $R > 0.9$ ) (Pallant 2007; Tabachnick & Fidell 2007). The presence of multicollinearity makes it difficult to determine the contribution of each independent variable (Hair et al 1998).

**Table 9.3: Multiple Regression Analysis (Anova Analysis)**

ANOVA <sup>b</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.409E8	11	5.826E7	12.979	.000 <sup>a</sup>
	Residual	5.835E7	13	4488684.708		
	Total	6.992E8	24			

a. Predictors: (Constant), total bank assets, Loan to Commerce N (m), Loan to Agric N (m), Share Capital N (, CRR, Total Investment N (m), Reserves, Loan to Manufacturing N (m), Other Liabilities N (m), Fixed Assets, Total Loans & Advances

**Table 9.4: Multiple Regression Analysis on Test Model (Coefficient Analysis)**

Model	Coefficients <sup>a</sup>						
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	-1480.330	1258.170		-1.177	.260		
Share Capital N (	-.012	.082	-.037	-.148	.885	.105	9.560
Reserves	.073	.118	.184	.617	.548	.072	13.873
Other Liabilities N (m)	-.055	.061	-.411	-.894	.387	.030	32.824
Loan to Manufacturing N (m)	.198	.197	.632	1.007	.332	.016	61.387
Loan to Commerce N (m)	.011	.039	.040	.272	.790	.304	3.293
Loan to Agric N (m)	-.108	.195	-.081	-.554	.589	.297	3.362
Total Investment N (m)	-.015	.013	-.332	-1.186	.257	.082	12.194
CRR	.163	.188	.179	.864	.403	.150	6.648
Fixed Assets	.516	.394	.575	1.310	.213	.033	29.991
Total Loans & Advances	-.093	.071	-.878	-1.312	.212	.014	69.870
total bank assets	.026	.022	1.081	1.167	.264	.007	133.710

a. Dependent Variable: Loan to Housing N (m)

It was earlier on observed that high correlation exist among some of the independent variables. Ordinarily, assumptions for multiple regression states that the largest VIF in the coefficient analysis table must not be more than 10 and average VIF must not be substantially greater than 1 (Myers 1990; Bowerman and O'Connell 1990) and tolerance level should not be below 0.1 (Menard 1995).

The multicollinearity among the predictors is so high that it is not feasible to remove some predictors to be replaced with another one. These predictors are derived from the balance sheets of the UMDBs and it is not feasible to be exchanging the predictors, at that point,

the most important predictor might be removed to be replaced with the predictor that is not so important. Bowerman and O'Connell (1990) recommend that if a predictor is removed, it is to be replaced with an equally important predictor. It is either more data are collected to reduce the multicollinearity or run a factor analysis on the predictors and use the resulting factor scores as the new predictors.

### **FACTOR ANALYSIS OF THE PREDICTOR(S)**

The existence of clusters of large correlation coefficients between subsets of variables suggests those variables could be measuring aspects of the same underlying dimension and they are known as factor (latent variables) (Field 2000 p.423; Tabachnick & Fidell 2007; Lunenburg & Irby 2008). Field (2000) suggested that factor analysis could be carried out on the predictor variables to reduce them down to a subset of uncorrelated factors. While Principal Component Analysis (PCA) produces components and empirical solution, Factor Analysis (FA) produces factors and theoretical solution. The essence of the factors is to identify smaller number of separate underlying factors accountable for the co-variation among the larger number of variables.

Most applications of PCA and FA are considered to be exploratory and factor analysis is used primarily as a tool for reducing the number of variables or examination of correlation patterns among variables, that is, overcoming collinearity problems in regression (Pallant 2007; Tabachnick & Fidell 2007; Field 2000) The factors in Factor Analysis refer to clump of related variables though factors in analysis of variance techniques are referred to as independent variables. Since Factor Analysis is used as data exploration technique, there is no hard and fast statistical rule in the interpretation of the outcome (Field 2000; Pallant 2007).

**Assumptions for Factor Analysis:**

- **Sample Size:** In the literature, it has been debated whether the reliability of factor analysis is dependent on sample size (Field 2000). There have been times when appropriate sample size has been considered as the most important factor in determining the reliability of factor analysis (Field 2000; Pallant 2007). With the introduction of simulation and Monte Carlo test (see Guadagnoli & Velicer (1988, as cited by Field 2000; Hair et al 1998), empirical results that the absolute magnitude of the factor loadings rather than the absolute sample size is the most important factor in determining a reliable factor solution. Therefore, Guadagnoli and Velicer (1988, as cited by Field 2000) argued that solutions with several high loading marker variables ( $>0.80$ ) do not require large sample size with 150 cases considered adequate while under some other circumstances, 100 or 50 cases are sufficient (Sapnas & Zeller 2002; Zeller 2005, as cited by Tabachnick & Fidell 2007). However, Nunnally (1978) suggested a 10 to 1 ratio, that is, ten cases for each item to be factor analysed while Tabachnick & Fidell (2007) suggested five cases for each item as adequate.
- **Factorability of the correlation matrix:** To be suitable for factor analysis, the correlation matrix should show at least some correlations of  $r=0.3$  or greater. Kaiser-Meyer-Olkin (KMO) value should be 0.6 and above. Bartlett's test of Sphericity is statistically significant at  $p < .05$
- **Linearity:** Factor Analysis is based on correlation, there is an assumption that relationship between the variables are linear, however it is not practicable to check the scatterplots of all variables against one another. On the "spot check" of some combination of variables could be carried out (Tabachnick & Fidell 2007; Pallant 2007)

**Table 9.5: Correlation Matrix of factor analysis**

Correlation Matrix													
		Share Capital N (m)	Reserves	Customer Desposits N (m)	Other Liabilities N (m)	Loan to Manufacturing N (m)	Loan to Commerce N (m)	Loan to Agric N (m)	Total Investment N (m)	CRR	Fixed Assets	Total Loans & Advances	total bank assets
Correlation	Share Capital N (m)	1.000											
	Reserves	.305	1.000										
	Customer Desposits N (m)	.484	.897	1.000									
	Other Liabilities N (m)	.529	.538	.621	1.000								
	Loan to Manufacturing N (m)	.162	.893	.885	.513	1.000							
	Loan to Commerce N (m)	.186	-.080	.139	-.086	.079	1.000						
	Loan to Agric N (m)	.094	.174	.182	.651	.119	-.114	1.000					
	Total Investment N (m)	.409	.825	.937	.484	.782	.028	.087	1.000				
	CRR	.218	.664	.692	.788	.738	-.059	.462	.592	1.000			
	Fixed Assets	.793	.666	.827	.743	.538	.226	.324	.741	.574	1.000		
	Total Loans & Advances	.525	.872	.964	.570	.891	.248	.133	.851	.629	.800	1.000	
	total bank assets	.651	.824	.930	.838	.761	.042	.386	.833	.743	.917	.892	1.000

**Table 9.6: KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.769
Bartlett's Test of Sphericity	Approx. Chi-Square	459.882
	df	66.000
	Sig.	.000

**Table 9.7: Total Variance Explained**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.501	62.506	62.506	7.501	62.506	62.506	5.888	49.069	49.069
2	1.547	12.888	75.393	1.547	12.888	75.393	2.495	20.796	69.865
3	1.352	11.267	86.660	1.352	11.267	86.660	2.015	16.796	86.660
4	.828	6.904	93.564						
5	.341	2.841	96.405						
6	.202	1.685	98.090						
7	.095	.790	98.879						
8	.083	.691	99.570						
9	.032	.269	99.839						
10	.009	.079	99.918						
11	.007	.062	99.980						
12	.002	.020	100.000						

Extraction Method: Principal Component Analysis.

**Figure 9.8: Communalities**

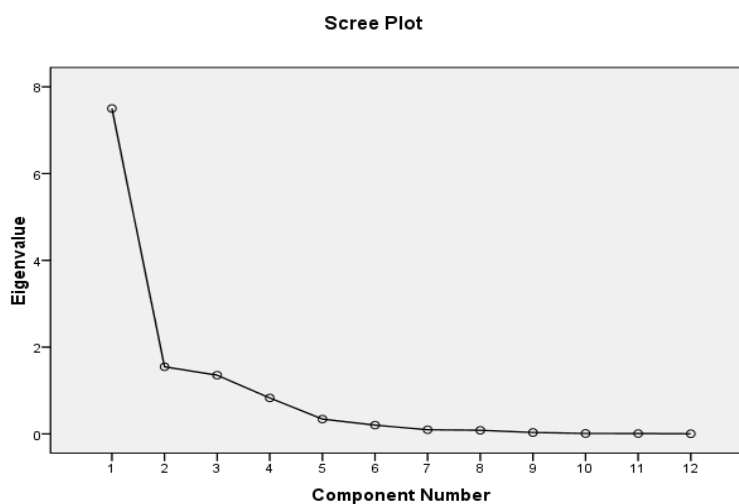
	Initial	Extraction
Share Capital N(M)	1.000	.815
Reserves N(M)	1.000	.906
Customer Deposits N(M)	1.000	.984
Other Liabilities N(M)	1.000	.926
Loan to Manufacturing N(M)	1.000	.927
Loan to Commerce N(M)	1.000	.538
Loan to Agric N(M)	1.000	.782
Total Investment N(M)	1.000	.851
CRR	1.000	.781
Fixed Assets	1.000	.946
Total Loans & Advances	1.000	.958
Total Bank Assets	1.000	.984

Extraction Method: Principal Component Analysis

To test whether the data could be amenable to factor analysis / principal component analysis, two tests were conducted. The twelve independent variables driving housing finance supply were subjected to principal component analysis with varimax rotation using SPSS version 16. Principal component analysis was adopted rather than factor analysis because it lends itself to psychometrically sound procedures in terms of linearity and simplicity. The suitability of the data was assessed and observed that the correlation matrix in Table 9.5 had many components of 0.3 and above.

The principal component analysis starts with communalities (see Table 9.8). Communality explains the total amount an original variable shares with all other variables included in the

analysis and it is very useful in deciding those variables that are meaningful and those that are trivial and to be discarded. Field (2000) stated that the closer the communalities are to 1, the better the factors are at explaining the original data and communalities are good indices of determining sample size adequacy. From Table 9.8, it is shown that the communalities are closer to 1. Again, McCallum et al (1999) in their study on factor analysis noted that as communalities become lower, the importance of sample size increases. When the communalities are above 0.6, a small sample, even less than 100 may be adequate. Thereafter, Bartlett's test of sphericity ( $p < .05$ ) (Bartlett 1954) and the Kaiser-Meyer-Olkin (KMO) for sample adequacy (Kaiser 1970, 1974) are conducted. KMO value achieved was 0.769 (see Table 9.6) against the recommended minimum of 0.6 (Field 2000; Tabachnick & Fidell 2007). Therefore these results support the factorability of the correlation matrix. The Bartlett's test of sphericity undertaken is used to establish the potential correlations, suggesting that clusters do exist in the factors. The sphericity value was 459.882 with an associated significance of 0.000 (see Table 9.6).



**Figure 9.1: Scree Plot for factor analysis**

**Table 9.9: Component Matrix<sup>a</sup>**

	Component		
	1	2	3
total bank assets	.983		
Customer Desposits N (m)	.967		
Total Loans & Advances	.937		
Fixed Assets	.885		.403
Reserves	.882		
Total Investment N (m)	.873		
Loan to Manufacturing N (m)	.847		-.410
CRR	.787		
Other Liabilities N (m)	.782	.535	
Loan to Agric N (m)		.809	
Share Capital N (	.569		.699
Loan to Commerce N (m)		-.501	.528

Extraction Method: Principal Component Analysis.

a. 3 components extracted.

**Table 9.10: Rotated Component Matrix<sup>a</sup>**

	Component		
	1	2	3
Loan to Manufacturing N (m)	.958		
Reserves	.935		
Customer Desposits N (m)	.926		
Total Loans & Advances	.895		
Total Investment N (m)	.891		
total bank assets	.775	.486	
CRR	.675	.568	
Loan to Agric N (m)		.883	
Other Liabilities N (m)	.439	.824	
Share Capital N (			.823
Loan to Commerce N (m)			.660
Fixed Assets	.590	.426	.645

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 4 iterations.

The rotated component matrix was produced after the necessary preliminary tests. This factor extraction procedure is performed to determine the smallest number of factors that can best be used to represent the interrelations among the set of variables. The most used extraction technique is the principal component analysis while others are image factoring; maximum likelihood factoring; alpha factoring; unweighted least squares and generalised least square.

It is to be noted that as a rule of the thumb, it is only variables with loadings in excess of .32 that are interpreted. The greater the loading, the more the variable is considered to be a pure measure of the factor. Loadings in excess of .71 (50% overlapping variance) are



considered excellent, .63 (40% overlapping variance) as very good, .55 (30% overlapping variance) as good, .45 (20% overlapping variance) as fair and .32 (10% overlapping variance) as poor (Comrey & Lee 1992; Tabachnick & Fidell (2007)).

The number of factors to be retained can be decided using Kaiser's criterion/Eigenvalue with factors of eigenvalue of 1.0 or more are retained for further investigation (Kaiser 1960; Field 2000). Again, Cattell's Scree test (Cattell 1966) plots eigenvalues of the factor to find a point at which the shape of the curve changes direction and become horizontal. Cattell recommends retaining all factors above the elbow. As shown in Table 9.7, three components with eigenvalue greater than 1.0 were extracted. The scree plot (Figure 9.1) confirmed these three components and Table 9.10 (Rotated Component Matrix) also reconfirm the three components. The components can be considered as the measuring rods for factors affecting housing finance supply in Nigeria, as a case study country. They are:

**(1) Component A-R factor sector 1 (Portfolio Component)** - The component is made up Loans to Manufacturing, Reserves, Customers Deposit Liabilities, Total Loans and Advances, Total Investment and Total Bank Assets (6). These are the investments made from the liabilities mobilized by each financial institution. Each financial institution's desire of holding assets depends on several factors and its preference for risk and returns (Hancock & Wilcox 1993; 1994).

**(2) Component A-R factor sector 2 (Statutory Regulation Component)** – The component is made up of Cash Reserve Requirements (CRR), Loans to Agriculture and Other Liabilities.

In an effort for government to ensure financial stability as well as addressing problems of asymmetric information and moral hazard, the financial market is regulated by the government. The regulation can be either Structural or Prudential in nature. While structural regulation limits the degree of risk that an institution can

take in order for government to protect investors' funds and exposure limits of the financial institutions (Pilbeam 2005), prudential regulation takes care of disclosure requirements, capital adequacy and liquidity requirements.

**(3) Component A-R factor sector 3 (Take-off Component)** – The component is made up of Share Capital, Fixed Assets and Loan to Commerce. When a business is about to start operations, funds are raised in form of share capital and part of the share capital is utilised in the acquisition of fixed assets. To start business in earnest, most of the financial institutions extend loans to commerce which are short-term in nature and the turn-around is fast.

The total variance is as shown in Table 9.7. The table shows that the total variance by each component extracted is explained as follows: before rotation component 1 (62.506%), component 2 (12.888%) and component 3 (11.267%). The final statistics of the principal component analysis and the components extracted accounted for 86.66% of the total cumulative variance of factors affecting housing finance supply. Even after rotation, the total variance for the extracted components remain 86.66% with each component having different contribution, component 1 (49.069%), component 2 (20.796%) and component 3 (16.796%).

However in extracting factors using Kaiser's criterion, it has been criticised that it's only accurate when the variables are less than thirty and communalities after extraction are greater than 0.7. All these conditions are applicable to this study in that virtually all the twelve variables had communalities of 0.7 and above except one.

Component Transformation Matrix

Component	1	2	3
1	.857	.400	.324
2	-.300	.899	-.319
3	-.419	.176	.891

Extraction Method: Principal Component Analysis.  
Rotation Method: Varimax with Kaiser Normalization.

Component Score Coefficient Matrix

	Component		
	1	2	3
Share Capital N (	-.142	.093	.496
Reserves	.230	-.072	-.156
Customer Desposits N (m)	.177	-.077	.025
Other Liabilities N (m)	-.067	.375	.035
Loan to Manufacturing N (m)	.263	-.126	-.192
Loan to Commerce N (m)	-.056	-.218	.455
Loan to Agric N (m)	-.151	.502	-.081
Total Investment N (m)	.198	-.119	-.019
CRR	.099	.202	-.188
Fixed Assets	-.024	.100	.304
Total Loans & Advances	.167	-.117	.087
total bank assets	.065	.114	.092

Extraction Method: Principal Component Analysis.  
Rotation Method: Varimax with Kaiser Normalization.  
Component Scores.

## 9.4: Model Testing

The database for undertaking the model test is sourced from the balance sheets and archival data from the UMDBs in Nigeria (see Appendix V). The collected data was analysed with Statistical Software for Social Science (SPSS) package version 16.0. The outputs of the regression analysis are presented in Tables 9.11 to 9.13. While Table 9.11 shows the model summary, Table 9.12 presents the Anova Analysis and Table 9.13 provides the coefficient analysis.

Table 9.11: Multiple Regression Analysis on Test Model (Model Summary)

Model Summary <sup>d</sup>										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.805 <sup>a</sup>	.648	.633	3269.63742	.648	42.406	1	23	.000	1.654
2	.894 <sup>b</sup>	.799	.781	2524.61870	.151	16.578	1	22	.001	
3	.932 <sup>c</sup>	.868	.849	2095.38877	.069	10.936	1	21	.003	

a. Predictors: (Constant), A-R factor score 1 for analysis 1

b. Predictors: (Constant), A-R factor score 1 for analysis 1, A-R factor score 2 for analysis 1

Model Summary<sup>d</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.805 <sup>a</sup>	.648	.633	3269.63742	.648	42.406	1	23	.000	1.654
2	.894 <sup>b</sup>	.799	.781	2524.61870	.151	16.578	1	22	.001	
3	.932 <sup>c</sup>	.868	.849	2095.38877	.069	10.936	1	21	.003	

a. Predictors: (Constant), A-R factor score 1 for analysis 1

b. Predictors: (Constant), A-R factor score 1 for analysis 1, A-R factor score 2 for analysis 1

c. Predictors: (Constant), A-R factor score 1 for analysis 1, A-R factor score 2 for analysis 1, A-R factor score 3 for analysis 1

d. Dependent Variable: Loan to Housing N (m)

**Table 9.12: Multiple Regression Analysis on Test Model (Anova Analysis)**

ANOVA<sup>d</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.533E8	1	4.533E8	42.406	.000 <sup>a</sup>
	Residual	2.459E8	23	1.069E7		
	Total	6.992E8	24			
2	Regression	5.590E8	2	2.795E8	43.852	.000 <sup>b</sup>
	Residual	1.402E8	22	6373699.558		
	Total	6.992E8	24			
3	Regression	6.070E8	3	2.023E8	46.084	.000 <sup>c</sup>
	Residual	9.220E7	21	4390654.109		
	Total	6.992E8	24			

a. Predictors: (Constant), A-R factor score 1 for analysis 1

b. Predictors: (Constant), A-R factor score 1 for analysis 1, A-R factor score 2 for analysis 1

c. Predictors: (Constant), A-R factor score 1 for analysis 1, A-R factor score 2 for analysis 1, A-R factor score 3 for analysis 1

d. Dependent Variable: Loan to Housing N (m)

**Table 9.13: Multiple Regression Analysis on Test model (Coefficient Analysis) Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	6638.120	653.927		10.151	.000		
	A-R factor score 1 for analysis 1	4346.166	667.412	.805	6.512	.000	1.000	1.000
2	(Constant)	6638.120	504.924		13.147	.000		
	A-R factor score 1 for analysis 1	4346.166	515.336	.805	8.434	.000	1.000	1.000
	A-R factor score 2 for analysis 1	2098.221	515.336	.389	4.072	.001	1.000	1.000
3	(Constant)	6638.120	419.078		15.840	.000		
	A-R factor score 1 for analysis 1	4346.166	427.719	.805	10.161	.000	1.000	1.000
	A-R factor score 2 for analysis 1	2098.221	427.719	.389	4.906	.000	1.000	1.000
	A-R factor score 3 for analysis 1	1414.474	427.719	.262	3.307	.003	1.000	1.000

a. Dependent Variable: Loan to Housing N (m)

#### **9.4.1: Discussion of the results**

The regression test model for supply of housing finance can be represented as follows:

$$\text{Supply of Housing Finance} = 6638 + 4346.2(\text{Portfolio Component}) + 2098.2(\text{Statutory Regulation Component}) + 1414.5(\text{Initial Take-off Component})$$

The value for R (multivariate equivalent for the bivariate correlation coefficient) in the model is .932, which translates to 93% of the total variation in the supply of housing finance. The  $R^2$  (R square) is .868 tells how much of the variance in the dependent variable (supply of housing finance) is explained by the model (Field 2000; Fan et al 2006; Pallant 2007). Expressed in percentage, it means that the model explain 86.8% of the variance in housing finance supply. Apart from these indicators, the model is also significant in assessing factors / components affecting housing finance supply in Nigeria.

In assessing factors affecting housing finance supply in Nigeria, the level of competition within the banking industry which was discussed in section 7.5.2 was not included in the model. From the calculations made with competition index movement of zero for lack of competition and one denoting maximum competition, there is no gainsaying in the fact that the level of competition is high (See Appendix V). Also, the factors affecting housing finance supply in Nigeria has been limited to the UMDBs, however factors affecting housing finance supply to other financial intermediaries within the Nigerian Financial System might form a basis for further research.

The results of the multiple regression reflects that supply of housing finance is positively affected by **Portfolio Component, Statutory Regulations Component and Initial Take-off Component.**

**Portfolio Component:** This component is made up of Reserves, Customers' Deposits, Total Loans and Advances, Total Investment, Total Bank Assets and Loan to Manufacturing. From Table 9.11 (Model 1), where portfolio component is the only predictor variable, the value of  $R^2$  comes to 64.8%, it means that the portfolio component accounts for 64.8% of the variation in housing finance supply. For housing finance supply by UMDBs in Nigeria, as long tenured assets, it is important for these institutions to have long tenured liabilities. These can be financed by reserves and long term deposits in form of savings and term deposits, therefore there is a positive relationship between housing finance supply and reserves/ customer's deposits.

These financial institutions invest in assets with the intention of generating incomes. Individual bank's desire of holding assets in any given category depends on several factors coupled with its preference for risk and return (Hancock & Wilcox 1993; 1994). Total Loans and Advances, Total Investment, Total Bank Assets and Loan to Manufacturing being assets like housing finance supply, the choice of what portfolio of investment to be held by the bank determines the assets to be acquired. Therefore, there is a positive relationship between the component and housing finance supply.

**Statutory Regulation Component:** Governments all over the world regulate financial institutions to protect investors and make sure the financial system efficiently promotes economic growth. From Table 9.11 (Model 2), where portfolio and statutory regulation components are the two predictors, the value of  $R^2$  comes to 0.799, therefore the contribution of statutory regulation component to housing finance supply comes to 0.151 (0.799-0.648). This translates to contribution of 15.1% to the variance. In Nigeria, the primary objective of the 2005 consolidation exercise includes the need for the banking sector to be strong and play active developmental roles (Ezeoha 2007). This is comparable

to situations where mergers and consolidation led to the creation of stronger and globally competitive banking institutions in Philippine (Reyes 2001) and in India (Talwar 2001).

Pilbeam (2005 p. 437) argues that since financial institutions have liquid liabilities in form of deposits and relatively illiquid assets in form of loans, it is mandatory to have regulations to abate any form of problems like inability of financial institutions to meet depositors withdrawal demands. The need for effective regulations was corroborated by Caprio Jr. et al (2008) arguing that the present financial crisis followed a period of sustained economic growth and ran counter to a well-established belief that flexible and resilient markets were distributing risk to those who could bear it best.

Even with the identified importance of effective regulations of financial institutions, Llewellyn (2008); Milnes and Wood (2009) and Shin (2009) in discussing the Northern Rock situation highlighted problems in the regulatory framework of British Financial System. Few of the problems include; deposit protection being ineffective when partial and subject to moral hazard if it is complete; inadequate role of the government in responding to financial market distress and ambiguity in regard to the distinction between liquidity and solvency issues in banks.

Llewellyn (2008) argues that in any regulatory / supervisory regime, four areas are supposed to be adequately addressed. The areas includes; prudential regulation of the financial firms; management of systemic stability; lender-of-last-resort role and conduct of regulation and supervision business. The banks were therefore failing with great speed exposing flaws in the regulatory system designed to identify collapsing institutions (The Wall Street Journal 2009).

Furthermore, Statman (2009) noted that the present situation in the financial market has renewed the debate about the roles of government in promoting confidence and trust in

consideration of economic gains that comes with it. Investors and even regulators had developed a false sense of security, with confidence and trust having evaporated, there have been demands for increased financial regulations. These statutory regulations can come in form of capital adequacy or loans exposure limits of the universal banks.

This component is made up of Loans to Agriculture, Other Liabilities and Cash Reserve Requirements (CRR). If the financial institutions are restricted about their exposure limits to Agriculture, which is a long tenured lending like housing finance, funds could therefore be made available for housing acquisition. Therefore, there is positive relationship between statutory regulations and housing finance supply.

In emerging economies, CRR is used as instrument of monetary policy. The reduction in CRR allows the monetary authorities to expand money supply resulting in low interest rate and improve the safety and soundness of the depository institutions (Hein and Stewart 2002).

**Initial Take-off Components:** This component is made up of Share capital, Loans to commerce and Fixed Assets. There is a positive relationship between Initial take-off component and housing finance supply. From Table 9.11 (Model 3), where the three predictors namely portfolio, statutory regulation and initial take-off components are utilised,  $R^2$  which we already know is a measure of how much of the variability in the outcome is accounted for by the predictors comes to 86.8%. The contribution of initial take-off component comes to 6.9% ( $0.868 - 0.648 - 0.151$ ).

### **9.5 Cross-Validation of the Model**

Validation is defined as an assessment of whether a model is in line with reality (Brink 2003; Ejohwomu 2007). The process makes effort to ensure that meaningful inferences can



be drawn from the general population and not limited to the sample used in the estimation (Good & Hardin 2003; Creswell & Plano Clark 2007). When same set of predictors from a different group of data are applied to a model and it has the capability of predicting the same outcome, it means the model can be generalised. At a point in time when the model is exposed to the same set of predictor(s) from a different group of data source and the predictive ability drops, then the model cannot be generalised (Field 2000). It is therefore important to carry out validation of regression models and the process of applying different samples of data to test the accuracy of a model is known as cross-validation.

As noted by Field (2000), for social sciences research it is important to have at least 15 subjects per predictor to come out with a reliable regression model. The cross-validation of the model can be done either by *data splitting* or *adjusted  $R^2$* .

*Data splitting* involves having the data randomly split into halves. Each half is usually applied to computed regression equations and results are compared. This approach is not usually employed because data are not large enough to get them split into two halves. In particular, studies using data from emerging economies have usually suffered from small sample as a deficiency, which was mentioned as a limitation in this study.

Therefore, the only option left to perform cross-validation of the model is through adjusted  $R^2$ , which is to be applied to this study. The adjusted value is an indication of shrinkage or the loss of predictive power. The  $R^2$  is an indication of how much of the variance in the dependent variable is accounted for by the regression model from the sample and the adjusted  $R^2$  is an indication of how much variance in the dependent variable would be accounted for if the model had been derived from the population from which the sample was taken. It is important to note that the SPSS apart from calculating  $R$  and  $R^2$ , it also derives the adjusted  $R^2$  using Wherry's equation (Wherry 1931, as cited by Field 2000).

However, this equation has been heavily criticised for its inability to indicate how well the regression model would predict an entirely different set of data sample. The version of  $R^2$ , which provides information about how well the regression model cross-validates uses the Stein's formula (Stevens 1992; Field 2000).

The Stein's formula for adjusted  $R^2$ :

$$\text{Adjusted } R^2 = 1 - \left[ \left( \frac{n-1}{n-k-1} \right) \left( \frac{n-2}{n-k-2} \right) \left( \frac{n+1}{n} \right) \right] (1 - R^2)$$

**Source: Adapted from Field, 2000**

Where,  $R^2$  is the unadjusted value,  $n$  is the number of cases and  $k$  is the number of predictors in the model.

In the test model, to assess factors affecting housing finance supply in Nigeria, the model summary for Model 3 is  $R = .932$ ,  $R^2 = .868$ , Adjusted  $R^2 = .719$ , which demonstrates a credible model for assessing factors affecting housing finance supply in Nigeria. There is an indication of a small drop (shrinkage) in the predictive power of the model. Therefore, the model is capable of accurately predicting the same outcome from the same set of predictors from a different group of population.

#### **9.6: Application and Merits of the model**

As shown in equation (2): figures from the model can be derived for  $a$ ,  $b_1$ ,  $b_2$  and  $b_3$ .

$$Y = a + b_1 X_1 + b_2 X_2 + b_3 X_3$$

Supply of Housing Finance ( $Y$ ) = 6638.12 + 4346.17 (Portfolio Component) +

2098.22 (Statutory Regulatory Component) + 1414.47 (Initial take-off Component)

**Portfolio Component - ( $b_1 = 4346.17$ ):** This value shows that as portfolio component increases by one unit, the supply of housing finance increases by 4,346 units in millions. The interpretation is correct, if the effects of statutory regulation and initial take-off components are held constant.

**Statutory Regulation Component – ( $b_2 = 2098.22$ ):** The value indicates that as the statutory regulation component expenditure increases by one unit, the supply of housing finance increases by 2098.22 units in millions. The interpretation is true only if the effects of portfolio and initial take-off components are held constant.

**Initial Take-off Component – ( $b_3 = 1414.47$ ):** This value indicates that as the initial take-off component increases by one unit, the supply of housing finance increases by 1,414.47 units in millions. The interpretation is true only if the effects of portfolio and statutory regulation components are held constant.

**t-tests:** The  $t$ - tests measures whether the predictor is making a significant contribution to the model. If the  $t$ -test associated with a  $b$  value is significant (if the value in the column labelled *Sig.* is less than 0.05) then the predictor is making a significant contribution to the model. The smaller the value of *Sig.* (and the larger the value of  $t$ ) the greater the contribution of that predictor

For model 3 with the three predictors, the coefficient table in Fig 9.13 reveals that:

For the Portfolio Component, value of  $t = 10.161$ ,  $p < 0.001$ ;

The Statutory Regulation Component,  $t = 4.906$ ,  $p < 0.001$ ; and

Initial take-off Component,  $t = 3.307$ ,  $p < 0.005$

The three components are all significant predictors of housing finance supply.

The exploratory model is for assessing factors affecting housing finance supply in emerging economies using Nigeria as case study country. As revealed from the literature review, it seem as if there had not been any quantitative assessment of housing finance supply in emerging economies. With the Nigerian data used and rigorous exercise of testing the model, the tested model can be utilised for assessing housing finance supply in the emerging economies. Within the period allowed for a study of this nature, the data sample could be improved upon to have the model refined and have a widely acceptable model for housing finance supply in emerging economies.

### **9.7 Summary**

The objective of this chapter has been the development in the absence of an empirical analysis, a quantitative model for assessing housing finance supply in emerging economies using data from UMDBs in Nigeria. The multiple regression approach adopted for data analysis highlighted the positive relationships between three identified components of long-term assets / liabilities, statutory regulations and take-off position to have positive relationships with the Loan to housing (Housing Finance Supply).

The next chapter which is the final chapter of the thesis identifies the key findings of the research and put forward recommendations to help improve housing finance supply in Nigeria.

## **CHAPTER TEN**

### **SUMMARY OF STUDY, CONCLUSIONS AND RECOMMENDATIONS**

#### **10.1 Introduction**

Chapter Ten of the study, being the last chapter, examines the summary of the research and is divided into five sections including the introduction. The second section summarises the nine chapters of the work, the third section presents the main conclusions emanating from the findings of the study. The fourth section highlights the areas of future research while the last section proposes policy recommendations.

#### **10.2 Summary of Study**

Chapter One set the pace of the work by providing the background for the research. From the literature, there is a strong belief (conviction) that a correlation exists between housing finance and economic development. Therefore, different views on economic and financial developments in both developed and emerging economies were examined. In justifying the need for this study, the trend of economic and financial development in the case study country (Nigeria) was briefly discussed, taking cognisance of the contributions of the financial institutions and UMDBs in particular to housing finance supply in Nigeria. This led to the development of research questions for the study and the setting up of the aim and objectives of the research. The study sought to investigate factors affecting housing finance supply in Nigeria using mixed methods approach. The limitations and assumptions of the research are also stated in the chapter.

Chapter Two examines the tenure patterns and mechanism for the establishment of an efficient market in developed economies. It is widely accepted that models, whether financial or engineering are copied from the advanced / developed economies for

applications in the less developed economies (emerging economies). On that premise, the housing models and housing finance systems in the developed economies like United States of America, the United Kingdom, the Netherlands and Germany as countries were examined. Specifically, the structure of property rights and forms of ownership in existence in developed economies, the theoretical finance concept, housing finance supply and demand theory were discussed. The factors that drive the efficient nature of their housing finance system were examined as foundation laying process for the aim of the study.

Chapter Three considers the group of countries that can be considered as emerging economies. This is followed by highlighting the characteristics of the housing sector and housing finance in different regions of the emerging economies. It was observed that each of the six regions namely: East Asia & Pacific, South Asia, Europe & Central Asia, Latin America & the Caribbean, Middle East & North Africa and Sub-Saharan Africa (SSA) that made up the emerging world has peculiarities that drives their housing sector and housing finance systems. Despite macroeconomic issues being the major problem hampering the efficient and effectiveness of their housing finance systems, efforts were being made by different countries to develop innovative products for mobilisation of funds for housing finance. Examples abound that India and Israel has mobilised \$11 billion and \$25 billion respectively through diaspora bonds issuance as at 2006 (Ketkar and Ratha 2007; Ratha et al 2008). South Africa has issued Reconciliation and Development Bonds (Bradlow 2006; Ratha et al 2008) and Ghana is selling Golden Jubilee Savings Bonds to Ghanaians in diaspora in Europe and the United States (Ratha et al 2008).

Chapter Four contextualises the study by providing the overview of the New Neoclassical Economics and discusses its fundamentals that are relevant to the study. Importantly, the

theory of financial intermediation and transaction costs were brought to the forefront. The essence of effective risk management in the present day financial intermediation process is considered to be very important. There is no gain in saying the fact that in emerging economies, rather than depending on information asymmetries as fundamental to the financial intermediation process, designs of relevant risk management frameworks are very important taken cognisance of recent happenings in the world financial market.

A detail description of the housing finance supply situation in Nigeria is provided in Chapter Five with concentration on the contributions of the UMDBs, the PMIs and the Insurance companies to housing finance supply in Nigeria. From statistical analysis, despite the application of various progressive government monetary policy tools including a reduction in liquidity ratio from 40 percent to 30 percent and the cash reserve requirements (CRR) reduced from all high time of 9.5 percent in 2005 to 2 percent presently, the UMDBs has been hesitant in lending to housing.

Chapter Six discusses the methods adopted for both data collection and data analysis. Secondary data were extracted from the balance sheets of the Central Bank of Nigeria (CBN) and the financial institutions (UMDBs) since it is a sure source of measuring the risk level of any sovereign nation. Furthermore, archival data regarding sectoral allocations of loans and advances between 2003 & 2007 were collected from the sampled financial institutions coupled with unstructured interviews with the corporate banking / loans and advances managers and chief executive officers of some insurance companies. The unstructured interviews were open-ended to allow the respondents freedom to respond to questions (Sowell & Casey 1982) compared to semi-structured interviews as interviews evolved from inquiry composed of a mix of both structured and unstructured questions (Meriam 1998; Lunenburg & Irby 2008). All these instruments are supplemented with four

hundred close-ended questionnaires to individuals that have approached UMDBs for housing finance at a point in time as a form of data triangulation. The adoption of data triangulation offers greater validity and reliability than using one data source.

Chapters Seven, Eight and Nine covers analysis of data collected in Lagos-Nigeria from different perspectives. Chapter Seven presents descriptive and graphical analysis of data collected on housing finance supply in Nigeria. From the sampled universal banks, it is observed that as the capital base is increased, their lending to housing also increases though not proportionately. Also as the cost of operations is a component of interest rate on lending, when the interest rate being charged is on the high side, the borrower would be reluctant to borrow at that rate of interest. Chapter Eight presents result of data collected on housing finance demand in Nigeria using proportion method to identify the significances of different variables in housing finance demand equation. The essence of collecting data on housing finance demand is to triangulate the study for reliability and validity. Though lending for housing acquisition by employers of labour is considered to be part of informal sector, because their lending operations is outside the orbit of government monetary control. In reviewing lending for housing from different sources namely: universal banks (UMDBs), mortgage institutions and the employers of labour, lending by employers of labour is identified to be the cheapest source of lending in Nigeria. However, the timing of the study does not permit a thorough assessment of repayment period to know whether the tenor would be suitable for housing acquisition. The Multiple Regression was adopted as methodological framework for data analysis in Chapter Nine to identify the predictive abilities of a set of independent variables on one continuous dependent variable.

Chapter Ten covers the Summary, Conclusion and Policy Recommendations.



### **10.3 Discussion and Main Conclusions from the Study**

The importance of this section is to discuss the fundamental research questions for this study and draw conclusions as relates to housing finance supply in emerging economies.

#### **Research Question One: Can the economic model of providing housing finance in developed economies be adopted in the emerging economies?**

It has been argued by Buckley and Kalarickal (2004), Hassler (2005) and Merrill (2006) that stable macroeconomic conditions, a proper legal framework for property rights, mortgage market infrastructure and long-term funding sources are some of the conditions to be met to have an effective mortgage finance supply in emerging economies. It has also been extensively discussed by Cho (2007) that the three pillars of a well-functioning

Mortgage Intermediation System (MIS) are considered to include intermediation efficiency, affordability enhancement and effective risk management.

In the United States under the era of market-making (1970s-1980s), the business model relying on using short-term deposits to fund long-term asset was adopted (USDHUD 2006; Cho 2007). After identifying the implicit risks involved in using short-term liability to finance long-term assets, the United States mortgage finance industry transformed to era of securitisation (1970s-1980s), Era of Automation / Computerisation (1990s to present) (USDHUD 2006). Prior to the year 2006, 66 percent of mortgage assets were funded by deposits in the European Union but mortgage covered bonds have experienced exceptional growth recently and has become one of the preferred securitisation instruments (Avesari et al 2007) before the financial crisis. The favourable environment for issuers and investors were created due to a well established regulatory framework and relatively low capital charges.

Milne & Wood (2009) and Shin (2009) in analysing the Northern Rock situation observes that within a financial system where short-term deposit liabilities are being used to acquire long-term illiquid assets, any disturbance in the leverage level would show up somewhere within the financial system. Furthermore, the point at which these short-term liabilities are being withdrawn, financial institutions holding long-term illiquid assets face a liquidity crisis, an example is the Northern Rock situation.

While financial institutions in the emerging economies are still utilizing short-term deposits to fund mortgages, it was derived from this study that factors affecting housing finance supply are the Portfolio Component, Statutory Regulation Component and Take-off Components. Under the Portfolio Component, customers' deposit liabilities are complemented with reserves (retained earnings) to determine the desire of the financial institutions of holding choice assets inclusive of lending to housing. However, the lending behaviour of the financial intermediaries and in particular, the mortgage lending practices has become complex and non-rational in nature. As argued by Markowitz (2009); Jones and Watkins (2009), the housing markets and lending standard have become disconnected from economic fundamentals and had moved out of step with the business cycle. The usage of highly leveraged financial instrument mostly in the developed economies, have aggravated the situation in that parties to the transactions do not know the limits to their liability and risk.

The regulations in form of borrowings by the financial institutions from international bodies like IFC and EIB, the amount of funds that could be committed to a single borrower and other government monetary policies like cash reserve requirement (CRR) also determine the assets acquired by the financial institutions are referred to as the Statutory Regulation Component. The Take-off Components represents the amount invested in the

fixed assets out of the share capital of the financial institution, with the remnant balance used for initial lending rather than using short-term deposit liabilities mobilised.

Therefore, with the lack of financial development and financial infrastructures coupled with unstable macroeconomic conditions like high inflation and interest rates, financial institutions in emerging economies cannot adopt the economic model being used in developed economies to fund their housing finance supply needs.

**Research Question Two: To what extent are these alternatives suitable to the unique economic conditions of the emerging economies?**

Financial development is a complex process which involves the transformation of financial intermediaries in both financial and capital markets made up of commercial (UMDBs) and investment banks, insurance companies and pension funds (McDonald & Schumacher 2007). Financial development is explained by several measures of financial deepness such as bank liabilities and bank credit, which predicts long-run economic growth and capital accumulation (King and Levine 1993b; McDonald and Schumacher 2007). Levine (2005) identifies some performed functions of financial intermediaries that improve welfare which include monitoring of investments and implementation of corporate governance; diversification and management of risks – including liquidity risk; mobilization and pooling of savings; facilitation of exchange of goods and services. Apart from the fact that each of these functions influences savings and investments decisions, they also influence economic growth.

For empirical work, financial development is typically measured by banking indicator of financial depth such as ratio of assets to GDP and bank credit to the private sector as a share of the GDP. Total assets of the financial intermediaries (ratio of assets to GDP in Nigeria increased from 25.7% in 2006 to 26.6% in 2007 (CBN 2007; Irving & Manroth

2009), the ratio of assets to GDP as at Dec. 2006 of 25.7% was made up of UDMBs- 20.6%, Pension Funds 2.9% and Insurance 1.6%; bank credit to the private sector as a share of GDP in Nigeria increased from 16.8% (1983-87), 11.5% (1993-97), 13.6% (2006) to 21.7% (2007) (CBN 2007; Irving & Manroth 2009); Ratio of Broad Money  $M_2$  to GDP ratio from 19.8% (2006) to 21.1% (2007) (CBN 2007).

These figures are relatively low compared with the situations in South Africa, Namibia and other countries in the Asian-Pacific Region, though progress are being made after the consolidation exercise in the Nigerian banking system in 2005. The exercise required any operating UMDB to have a minimum capital of US\$200million. Financial development and depth in financial intermediation in most countries of the emerging economies is a gradual process and might take time to take shape.

It is important for countries in the emerging economies particularly Nigeria to be creative in mortgage product design to mobilize long-term funds to finance housing acquisition. The suitable alternatives which can be used as mobilization instruments include issuance of diaspora bonds, migrant remittances and bonds / pension funds. These medium of mobilising long-term funding does not require sophisticated financial system like what is obtainable in the developed economies. It is only important for the sovereign government to have the political will in providing adequate and habitable shelter for its citizens.

**Research Question Three: The supply of housing finance is demand-driven, to what extent are demands being made?**

A well-functioning housing finance system is essential in expanding effective demand for housing and improving the housing conditions of a nation (Kim 1997; Quigley 2000 and Warnock & Warnock 2008). Due to apathy shown by borrowers, housing finance supply from the formal sector in most countries of the emerging economy accounts for less than

twenty percent of home purchases, with loans from relatives, employers and money lenders supplement savings and current income to finance housing and account for between seventy to eighty percent to housing finance supply (Renaud 1985 and Kim 1997).

Most of the respondents making efforts to raise housing finance are married and in the age bracket of thirty to fifty nine years. Individuals above sixty years of age are assumed to be nearing their retirement age and do not make efforts to source for housing finance. In Nigeria, the illiteracy level is high and income is low, the monthly minimum wage is equivalent of US\$65, though there is agitation to get the monthly minimum wage reviewed. This abnormal does not encourage banking habit. From the study, over ninety percent of individuals sourcing for housing finance attended institutions of higher learning either a polytechnic or University. This translates to the fact that individuals that are not well educated might not bother sourcing for housing finance from the formal sector. Neither are the self-employed individuals that their incomes cannot be easily verified in most cases seldom source for housing finance in the formal source.

This argument buttress the points raised by Jones and MacLennan (1987 p. 206) that it is not only supply of mortgage finance being unable to sustain demand, but that creditworthy households may not seek loan finance to meet up their mortgage finance needs.

Generally in most of these economies, borrowings are considered as taboo and selling one's properties due to loan repayment default is as if an individual has offended the gods. From the study (see Table 8.7), despite that borrowing from employers is considered as informal source of housing finance supply, the interest rate is the cheapest at 9 percent and over 50 percent of respondents enjoyed housing finance supply from that source. Again the interest rate charged by borrowing from mortgage institutions is 14 percent compared to interest rate of 20 percent charged by borrowing from UMDBs. This is due to the fact that

the mortgage institutions are employed in executing the government subsidised National Housing Funds scheme and also their overheads are smaller than what is obtainable at the UMDBs.

The power theory of credit highlights that financial institutions would be willing to lend, in case of default, they could easily enforce contracts by forcing repayment or seize collaterals. The volume of credit in a country like Nigeria depends on the existence of legislation that protects creditor rights and the timing of procedures that lead to repayment. In Nigeria, when a creditor takes a court action on loan repayment default, the court case might proceed for upwards of ten years. However, the information theories of credit observe that large volume of loans could be extended to firms and individuals, if these financial institutions can predict the probability of repayment of borrowings by their customers. Therefore, public and private credit registries that can provide information to financial institutions about the repayment history of potential borrowers is vital to the deepening of the credit market. The establishment of private credit registry is being organised by the financial institutions in Nigeria (Oke 2009) while the Central Bank has been acting as public registry though on a local scale.

**Research Question Four: In an effort to demand for housing finance, to what extent are resources being effectively mobilized for economic development?**

The literature contends that housing finance sector should play a central role in the mobilisation of resources by households (Renaud 1984 & 2008; Roy 2007). Also, one of the indicators for measuring financial deepness of an economy is the deposit within a financial system as a ratio of the GDP (Vatnick 2008; Irving & Manroth 2009). Therefore in an effort to lend towards housing, financial institutions do encourage individuals to open account and keep a percentage of the cost of that property as deposit. It is relatively

expensive to borrow for housing acquisition from UMDBs, but in an effort to acquire one, sixty-one percent of the respondents save with UMDBs and over ten percent of the respondents saves with mortgage institutions.

### **10.3.1 Contribution to Knowledge**

Despite numerous factors hindering the development of housing and housing finance in emerging economies, uncountable efforts in terms of research have been descriptive in nature though highly informative (Warnock & Warnock 2008). Also few descriptive studies and lately empirical analysis carried out on housing finance have been in the areas of housing finance demand.

Having indentified risk management as fundamental issue in financial intermediation and housing finance in particular, research efforts have not been made to do empirical analysis of housing finance supply in emerging economies and Nigeria in particular. Therefore this research seeks to contribute to the empirical analysis of housing finance supply in the emerging world in an effort to bridge this gap.

The study resulted in the production of the following risk-centred and peer-reviewed papers:

#### ***Conference Papers***

- (1) Akinwunmi, A., Gameson, R., Hammond, F. and P. Olomolaiye (2007) – Mortgage Insurance and Housing Finance in Emerging Economies – in *Boyd, D. (Ed) – Proceedings of 23<sup>rd</sup> Annual ARCOM Conference, 3-5 September 2007, University of Ulster, Belfast-UK, Association of Researchers in Construction Management pp 243-252.*

- (2) Akinwunmi, A., Gameson, R., Hammond, F. and P. Olomolaiye (2008) – The Effect of Macroeconomic Policies on Project (Housing) Finance in Emerging Economies – in *Lodi, S.H., Ahmed, S.M., Farooqui, R.V. and M. Saqib (Eds) – Proceeds of First International Conference on Construction in Developing Countries, “Advancing and Integrating Construction Education, Research & Practice”, 4-5 August 2008, Department of Civil Engineering, NED University of Engineering and Technology, Karachi-Pakistan pp 22-32*

***Journal Paper***

- (1) Akinwunmi, A., Gameson, R., Hammond, F. and P. Olomolaiye (2009) – Is securitization a panacea for housing finance dilemma in Emerging Economies, *Journal of Structured Finance* (Under Review)

**10.4 Areas of Further Research**

There is a time framework within which a candidate is expected to complete a PhD Research programme and it might be a herculean task to collect a large sample of data for analysis. It is necessary to continue with the following aspects of housing finance in Nigeria:

- (1) Increasing the data sample, that is, collection of data on housing finance supply from the 24 UMDBs operating in Nigeria while investigating factors affecting housing finance in Nigeria.
- (2) The First Building Society in Britain is believed to have been founded in 1775 (Building Societies Yearbook 1975, as cited by Hadjimatheou 1976) and as at December 2006, they were contributing 38.2 percent of over £1,000 billion outstanding mortgage loans in Britain (Boleat 2008). The regulatory framework for



the establishment and operations of Primary Mortgage Institutions in Nigeria was provided by the promulgation of the Mortgage Institutions Decree No 53 of 1989. After ten years of existence, an empirical analysis of their (the PMIs) contribution to housing finance supply needs to be undertaken.

- (3) Macroeconomic volatility and lack of effective risk management has been considered as the major factors hindering the efficient housing finance supply in emerging economies and Nigeria, intensive studies have to be undertaken to consider the market and suitability of diaspora bonds and migrant remittances in housing finance.

### **10.5 Policy Recommendations**

As argued by Jacobs and Manzi (2000), research within the empirical tradition attains a sophisticated level in its analysis of social phenomena. Its primary purpose being the establishment of facts and prescription of effective line of action compared with the conceptual tradition where materials are collected as evidence to reinforce policy recommendations. Therefore, premised on the findings of this study, the following recommendations are proposed.

Premised on the findings of the study, the following recommendations are proposed.

#### **(1) Merger of Regulatory Authorities:**

The Nigerian Financial System as at December 2007 was made up of 24 Universal Development Money Banks (UMDBs), 5 Discount Houses, 77 Insurance Companies, 93 Primary Mortgage Institutions (PMIs), 709 Microfinance Banks (MFBs), 112 Finance Companies (FCs), 1 Stock Exchange, 1 Commodity Exchange, 5 Development Finance Institutions and 703 bureaux-de-changes (BDCs) (CBN 2007).

These institutions are being regulated by the Central Bank of Nigeria (CBN), the Nigerian Deposit Insurance Corporation (NDIC), the Securities and Exchange Commission (SEC), the National Insurance Commission (NAICOM) and the National Pension Commission (PENCOM).

In the United Kingdom, the Bank of England founded in 1694 has three evolving roles of monetary control, prudential control and placement of government debt on the most favourable terms (Heffernan 2003; Buckle & Thompson 2005). The Financial Services Act (1986) set up a system where non-banking financial activities like stock-broking, insurance are being regulated by self-regulatory organisations (SROs). Presently, the Financial Services Authority (FSA) through the Financial Services and Markets Act 2000 (FSMA) regulates the financial services and markets.

In the United States, the Federal Reserve Act 1913 authorised the establishment of the Federal Reserve Bank (Fed) made up of 12 regional Federal Reserve Banks. For clarity, the Federal Reserve has the authority to examine member banks and Federal Deposit Insurance Corporation (FDIC), created after the US Banking Act (1933), examines the insured banks. To avoid duplication, the Fed examines the state member banks, the Comptroller of the currency examines the national member banks and the FDIC examines the non-member (of the FRS) insured banks (Heffernan 2005). However, the Federal Savings and Loans Insurance Company (FS&LIC) created under the Federal Home Loan Bank Board in 1934, was charged with the responsibility of regulating the Federal Savings and Loans (Cho 2007).

The trend on integrated supervisory agencies has grown rapidly in the last decades. Any supervisory agency responsible for prudential supervision of banking,

insurance and securities markets are considered to be “fully integrated” (Cihak and Podpiera 2006). Singapore in 1982 was the first country to embark on integrated supervision followed by Norway in 1986. As at the end of 2004, there were 29 fully integrated supervisory agencies worldwide with about half being in Europe, which includes Australia, The Republic of Korea and Japan.

It is argued by Cihak and Podpiera (2006) that an integrated financial supervision model is likely to be more flexible, encourages economies of scale which should lead to greater efficiency and even improve accountability. In Nigeria, there are many regulators compared to the number of financial intermediaries and non-bank financial intermediaries in existence and they operate at cross purpose. Then is there no need to have that integrated supervisory agency? As highlighted by Nwogwugwu (2008b), will the establishment of Oversight Body for Financial Sector Surveillance and supervised by the executive arm of government not be exposed to political manipulations?

Under the Financial Services and Markets Act 2000 (Regulated Activities) Order 2001 (RAO), Part II of the RAO listed the Regulated Activities and Part III of the RAO listed the specified investments. The FSA in the UK is responsible for the Investment Management and Regulatory Organisation that oversees unit and investment trusts; Lloyd's; insurance companies; recognised exchange – London Stock Exchange and commodity markets; banks; clearing houses and the Security and Future Authority. In the United States, supervision of banks is shared among FDIC, Federal Reserve Banks and the Comptroller of currency.

In Nigeria, it is important to align our financial supervisory structures with the country's needs (Carmichael et al 2004). In countries with small financial sectors, the economies of scale in adopting an integrated agency might outweigh the cost of adopting the model. However, a consolidated system is ideal for a country like Nigeria where there is lack of integration in the financial system mainly dominated by banking institutions with little role for the capital market. What is the limit of control in the capital market between the Securities and Exchange Commission (SEC) and the Nigerian Stock Exchange (NSE)? The CBN should be charged with the functions of Monetary Control, Prudential Control and placement of government debt like the Bank of England. The NDIC to be assigned that function of supervising both insured banks and insurance companies at least they are all financial intermediaries.

## **(2) Infrastructure Financing and Reduction of Interest Rates**

Interest rate is defined as the yearly price charged by a lender to a borrower in order for the borrower to obtain credit facilities from the lender (Philbeam 2005; Nwaoba 2006). Since the deregulation of interest rates in Nigeria in 1990, cost of funds and costs of credit are set by the financial institutions according to the dictates of the market.

Nwaoba (2006 p.46) noted that cost of funds determination is influenced by factors such as inflation rate, inter-bank funds rate; creditworthiness of risk of the borrower; saving rate; maturity period; CRR for banks; liquidity ratio; minimum discount rate; growth of bank credit to the economy; growth of money supply; the rate of economic growth; loan-deposit ratio of banks etc and overhead cost.

The overhead cost is made up of depreciation on electricity generator, cost of diesel to run the generator at exorbitant cost. The provision of electricity by any government is described as a form of infrastructure and infrastructure as a whole stock of capital and facilities for producing public goods (Martinnand and Amsler 1993 p. 57). Arimah (2003), Devas (2003) and Lohse (2003) attributes finance as a major factor constraining the capacity of governments to provide adequate infrastructure coupled with poor developed tax systems. Akintoye (2008) observes that funding major infrastructure development has become a problem for many countries that depended on government annual capital investment budget. It was noted that despite the higher need for infrastructural development in low income countries in the emerging economies, the level of participation of private sector is very low and highlighted energy as one of the sectors where investments are urgently needed. Justified expenditure on power generation can reduce the overhead costs in most of the financial institutions and reduce the cost of funds. This will translates into lower rate of interest. In most of the developed economies, interest rate on mortgage lending is below 8 percent, whereas in Nigeria, the interest rate is averagely over 20 percent.

### **(3) Issuance of Diaspora Bond for Housing Finance**

As discussed in section 3.5.6.1, diaspora bond is a debt instrument issued by a country or by a private corporation to raise long term funds from its overseas diaspora (Chander 2001; Ratha et al 2008). Counties in Africa like South Africa, Ghana and Kenya has been issuing one form of diaspora bonds to mobilise long term funds from their residents abroad.

**Table 10.1: Potential Market for Diaspora Bonds (2005)**  
**Adapted from Ratha et al (2008)**

	Diaspora Stock (‘000)	Potential Diaspora Saving(\$ Billion)
South Africa	713	2.9
Nigeria	837	2.8
Kenya	427	1.7
Ghana	907	1.7

With an estimated diaspora stock of 837,000 Nigerians in 2005, which are identified as migrants and maybe over a million in 2008, there is surely a big market for diaspora bond market outside the shores of Nigeria. With Nigerian UMDBs spreading across Africa, Europe and the Americas, the diaspora bond market could be developed like the Certificate of Deposit (CD) market as a deposit mobilisation instrument for housing finance. Universal Banks that want to issue diaspora bond are to seek approval from the CBN like is done for the Certificate of Deposit (CD).

#### **(4) Reduction in Transaction Cost of Migrant Remittances and Housing Finance**

**Table 10.2: Top Ten Remittances Recipients in Low-Income Countries (2007)**  
**Adapted from Ratha and Xu (2008)**

Countries	Amount of Remittances (\$ Billion)
India	27.0
Bangladesh	6.4
Pakistan	6.1
Vietnam	5.0
Nigeria	3.3
Nepal	1.6
Kenya	1.3
Yemen Republic	1.3
Tajikistan	1.3
Haiti	1.2

Nigeria is among the top ten remittance recipients in 2005 with India, Pakistan, Cote d'Ivoire, Ghana, Uzbekistan, Bangladesh, Nigeria, Nepal, Tanzania, Burkina Faso in that order with remittance recipients of \$3.3billion in 2007 (Ratha and Xu 2008) from the official source. Therefore, there is potential for mobilizing funds through migrant remittances.

Gupta et al (2009); Freund and Spatafora (2005) estimates the informal remittances to sub-Saharan African at relatively high at 45-65 percent of formal flows. The high turnover in the informal transfer market is due to high transaction cost of remitting money through formal channels (Ratha et al 2008; Gupta et al 2009). Reduction in transaction costs would increase remittances flows to sub-Saharan Africa (SSA) (Page and Plaza 2006).

The average cost including foreign exchange premium of sending \$200 from London-Lagos, Nigeria in mid-2006 was 14.4 percent of the amount (Ratha and Shaw 2007) which must have been higher by January 2009. When funds are transferred from Birmingham, UK – Lagos, Nigeria at the informal market, the transaction cost of remittance is percent of the amount being transferred. If this wide disparity of  $(14.4\% - 5\%) = 8.6\%$  can be closed, migrant remittance can be a good source of mobilising funds for housing finance.

##### **(5) Customary Land and Land Registration and the Land Use Decree (1978)**

As argued in the literature by Abdullahi (2006; 2007), the perception that traditional land rights are insecure is premised on the fact that the rights are not formally recorded in a central system controlled by the state. It is argued that both registered and unregistered titles can be contested and even registered land can be lost or annulled. Land registration does not guarantee the security of title or make it

indefeasible, there have been instances where two mortgages are created on one land.

In an effort to solve problem of land acquisition for housing provision, the Federal Government promulgated Land Use Decree of 1978 to effectively nationalise land. With the governor's consent being an important feature on transactions related to registered land, it has slowed down land transactions considerably and expose officials to corrupt practices. Mabogunje (2002); Iwarere and Megbolugbe (2008) observed that these inadequacies has compounded issues of land transactions. Registered and Unregistered land titles can be adopted to make land more readily available for the provision of adequate housing for the populace.

In early 2009, the President sent the Land Use Ammendment Act 2009 to the National Assembly seeking to amend the Land Use Act of 1978, by restricting the requirements for Governor's consents to assignment only. As Imam (2009) noted, the amendments being proposed relates to Sections 5, 7, 15, 21, 23 and 28 of the existing Act as stated below:

Section 5, subsection (1) (f) of the Act which states that, *it shall be lawful for the governor in respect of land, whether or not in an urban area, to impose a penal rent for a breach of any condition, expressed or implied, which precludes the holder of a statutory right of occupancy from alienating the right of occupancy or any part thereof by sale, mortgage, transfer of possession, sublease or bequest or otherwise howsoever without prior consent of the governor,*

The amendment wants the deletion of all the words after sale.



That the words “or subletting” should be deleted from Section 7 of the Act which states that, *“It shall not be lawful for a governor to grant a statutory right of occupancy or consent to the assignment or subletting of a statutory right of occupancy to a person under the age of twenty-two years.”*

The amendment seeks to delete the word “mortgage” from Section 15 subsection (b) which states that *“during the term of a statutory right of occupancy, the holder may, subject to the prior consent of the governor, transfer, assign, or mortgage any improvements on the land which have been effected pursuant to the terms and conditions of the certificate of occupancy relating to the land”*

In Section 21, the amendment seeks to delete all the words after assignment (same as Section 5, subsection (1) (f) quoted above) and making same as subsection 1 and creating a subsection (2) in the following words: *The right of a holder of a customary right of occupancy to alienate such right by mortgage is hereby recognised”.*

In Section 22, the amendment seeks to delete the words: *mortgage, transfer of possession, sublease or otherwise howsoever*”, immediately after the word assignment, deleting the proviso to subsection (1) and (2) and creating a new subsection (3) as follows: *“the consent of the governor shall not be required for the creation of a mortgage or sub-lease under this section”.*

Section 23 however, is to amended by substituting the entire subsection (1) as follows: *“A sub-lease of a statutory right of occupancy, may, with the approval of the statutory right of occupancy, demise by way of sub-underlease to another person, the land comprised in the sublease held by him or any other person of the land”* and deleting the provision of subsection (2).

The amendment also seeks to substitute Section 28 subsection (2) paragraph (a) as follows: *“the alienation of the occupier by assignment or sublease contrary to the provisions of this Act or any regulations made thereunder”*, and subsection (3) paragraph (d) as *“the alienation of the occupier by sale, assignment or sub-lease without the requisite consent or approval”*.

#### **(6) Mortgage Insurance and Mortgage Lending**

Risk management has been considered as one of the most important factor hindering efficient mortgage lending in emerging economies. Risks in developed economies have been managed and mitigated through effective management and/or creative financing structure.

Mortgage Insurance is a form of insurance offering credit protection to mortgage lenders. It provides lenders with a reliable means of transferring credit risk to the insurance sector (Merrill & Whiteley 2003; Whittingham 2005; Klopfer 2005 and Cantor-Gable 2006). It improves the lending business of the banks, improves affordability for borrowers and increase consumer's access to high LTV mortgages. Its' adoption is timely in Nigeria to achieve risk sharing by lenders, improve standardisation and risk management for the mortgage finance sector. This adoption, which is already being used in Poland, Mexico in form of life insurance policy as a hedge against negative amortization on a dual indexed mortgage (OPIC 2000), are likely to lead into improved asset quality, improved market liquidity, greater social inclusion, more robust underwriting process, improved management information and transfer of risk outside the banking sector. The borrower is

required to pay monthly premiums with his/her mortgage and it's value grow compared with the outstanding balance on the mortgage.

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## Appendix 1

**Adeboye Akanni Akinwunmi**

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30 June 2008

### **An Investigation into Factors Affecting Housing Finance Supply in Emerging Economies: A Case Study of Nigeria**

#### **INFORMATION SHEET**

Dear Potential Participant,

My name is Adeboye Akinwunmi, and I am a PhD Research student at the University of Wolverhampton, working under the supervision of Dr Rod Gameson. I am carrying out a study investigating factors affecting housing finance supply in Nigeria.

I would like to invite you to participate in the above research project, as you have been identified as staff of a financial institution in Nigeria.

Completion of the attached questionnaire will take approximately 10 minutes, and all questions can be answered by following the simple instructions as indicated on the questionnaire. Completion of the questionnaire is completely voluntary. All responses are anonymous and respondents who take part will not be identifiable. If results of this study are published they will be a summary of all responses to ensure that your privacy is protected.

Should you choose to complete the questionnaire, I would be back within the next three to four days to pick up the questionnaire. Returning this questionnaire will be considered as your consent to participate in the survey.

Once completed a summary of results will be available at the conclusion of the academic year. If you wish to obtain a copy of these results, please provide your contact details. Please note that all data gathered for this research will be stored securely and destroyed after the dissertation has been submitted. My supervisor and I will be the only people who will have access to this data.

Thank you for taking time to consider this invitation and if you choose to participate in this research, I would like to extend my personal gratitude; your contribution is greatly appreciated.

Adeboye A. Akinwunmi

This project has been approved by the University of Wolverhampton's School of Engineering and the Built Environment Ethics and Safety Committee.

Request for Secondary Data APPENDIX 2

**Adeboye Akanni Akinwunmi,**  
 School of Engineering and the Built Environment,  
 University of Wolverhampton,  
 Wulfruna Street, Wolverhampton WV1 1SB  
 United Kingdom.  
 Tel. +44(0) 7921652808  
 Email: [adeboyeakin@yahoo.co.uk](mailto:adeboyeakin@yahoo.co.uk)

30 June 2008

Dear Sir / Madam,

**Request for Information on Sectoral Allocation of Lending by your Bank**

I wish to request for secondary information on Sectoral Allocation of Lending by your bank.

I am a PhD research student at the above named university investigating **Factors Affecting Housing Finance Supply in Emerging Economies: A Case Study of Nigeria.**

As part of my data collection exercise for the research, I would like to obtain information from existing records of your organisation.

Kindly complete the Table below reflecting the sectoral allocation of your lending between year 2001 and 2007 in Housing, Manufacturing, Commerce and Agriculture with interest rates charged.

	Housing Loan (Naira in millions)	Interest Rate %	Loans to Manufacturing (Naira in millions)	Interest Rate %	Loans to Commerce (Naira in millions)	Interest Rate %	Loans to Agriculture (Naira in millions)	Interest Rate %
2007								
2006								
2005								
2004								
2003								
2002								
2001								

Information provided will be used strictly for the purpose of the effort explained above. I wish to express my gratitude to you in anticipation of the positive consideration of my request.

Yours' faithfully,

Adeboye Akinwunmi

APPENDIX 3

**Adeboye Akanni Akinwunmi**

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30 June 2008

**An Investigation into Factors Affecting Housing Finance Supply in Emerging Economies: A Case Study of Nigeria**

**INFORMATION SHEET**

Dear Potential Participant,

My name is Adeboye Akinwunmi, and I am a PhD Research student at the University of Wolverhampton, working under the supervision of Dr Rod Gameson. I am carrying out a study investigating factors affecting housing finance supply in Nigeria.

I would like to invite you to participate in the above research project, on the presumption that you have at a point in time approached a financial institution to request for housing loan.

Completion of the attached questionnaire will take approximately 10 minutes, and all questions can be answered by following the simple instructions as indicated on the questionnaire. Completion of the questionnaire is completely voluntary. All responses are anonymous, there are no correct or incorrect answers and respondents who take part will not be identifiable. If results of this study are published they will be a summary of all responses to ensure that your privacy is protected.

**Should you choose to complete the questionnaire, I would be back within the next three to four days to pick up the questionnaire. Returning this questionnaire will be considered as your consent to participate in the survey.**

Once completed a summary of results will be available at the conclusion of the academic year. If you wish to obtain a copy of these results, please provide your contact details. Please note that all data gathered for this research will be stored securely and destroyed after the dissertation has been submitted. My supervisor and I will be the only people who will have access to this data.

Thank you for taking time to consider this invitation and if you choose to participate in this research, I would like to extend my personal gratitude; your contribution is greatly appreciated.

Adeboye A. Akinwunmi

This project has been approved by the University of Wolverhampton's School of Engineering and the built environment Ethics and Safety Committee.

UNIVERSITY OF  
**WOLVERHAMPTON**

School of Engineering and  
the Built Environment

**APPENDIX 4**

**QUESTIONNAIRES FOR USER OF HOUSING FINANCE IN NIGERIA**

Dear Sir/Madam,

I humbly request your time to complete the attached questionnaire on a PhD research work titled: **An investigation into factors affecting housing finance supply in emerging economies: A case study of Nigeria**. All the information provided will be held in strict confidence.

The questionnaire is being used in assessing the factors that affect the willingness of the financial institutions in lending towards housing construction while potential borrowers are demanding for housing finance.

**Qualified Respondents:**

**To be completed by individuals that have at one time or the other approached a financial institution to request housing finance.**

**Request**

**Please try your best to provide an accurate response as possible to the questions. There are no right or wrong answers.**

Relevant answers should be indicated with cross (X) box (es).

**A. GENERAL BACKGROUND**

**1. What is your Marital Status? (Tick one box)**

- |    |                          |          |
|----|--------------------------|----------|
| 1. | <input type="checkbox"/> | Single   |
| 2. | <input type="checkbox"/> | Married  |
| 3. | <input type="checkbox"/> | Divorced |
| 4. | <input type="checkbox"/> | Widow    |
| 5. | <input type="checkbox"/> | Widower  |

**2. What is your Age? (Tick one box)**

- |    |                          |       |
|----|--------------------------|-------|
| 1. | <input type="checkbox"/> | 1-29  |
| 2. | <input type="checkbox"/> | 30-39 |
| 3. | <input type="checkbox"/> | 40-49 |
| 4. | <input type="checkbox"/> | 50-59 |
| 5. | <input type="checkbox"/> | 60+   |

**3. What is the highest form of formal education that you have achieved? (Tick one box)**

- |    |                          |                          |
|----|--------------------------|--------------------------|
| 1. | <input type="checkbox"/> | None                     |
| 2. | <input type="checkbox"/> | Primary                  |
| 3. | <input type="checkbox"/> | Secondary                |
| 4. | <input type="checkbox"/> | Vocational / Technical   |
| 5. | <input type="checkbox"/> | Polytechnic / University |

**4. What is your current employment status? (Tick one box)**

- |    |                          |                                    |
|----|--------------------------|------------------------------------|
| 1. | <input type="checkbox"/> | White collar job (Civil Servant)   |
| 2. | <input type="checkbox"/> | White collar job (Private company) |
| 3. | <input type="checkbox"/> | Blue collar job (Bricklayers etc)  |
| 4. | <input type="checkbox"/> | Self Employed (Specify)            |
| 5. | <input type="checkbox"/> | Other (Please specify).....        |

**B. HOUSEHOLD CHARACTERISTICS****5. What is your type of family? (Tick one box)**

1. ☐ Nuclear
2. ☐ Joint / Extended
3. ☐ Others (Please specify).....

**C. TENURE OF THE HOUSE****6. What is the tenure of the house? (Tick one box)**

1. ☐ Own
2. ☐ Rent
3. ☐ Part Own / Part Rent
4. ☐ Others (Please specify).....

**7. What is the form of ownership? (Tick one box)**

1. ☐ Inheritance
2. ☐ Bought
3. ☐ Built
4. ☐ Others (Please specify).....

If Answer to Q 7 is 3, go to Q 8

If Answer to Q 7 is 1, 2 or 4, go to Q 13

**8. IF BUILT, did you? (Tick one box)**

1. ☐ Buy the plot
2. ☐ Inherit the plot
3. ☐ Others (Please specify).....

**9. IF BUILT, who carried out the construction? (Tick one box)**

1. ☐ Self-Built
2. ☐ Contractor with material
3. ☐ Contractor without material
4. ☐ Others (Please specify).....

**D. HOUSING FINANCE**

10. When housing is to be acquired, it is either constructed from scratch or a fully erected building is purchased. If constructed from scratch, how much did the plot cost? N.....
11. How much did you spend on construction? N.....
12. Can you give value of the property on completion?  
N.....
13. If a fully erected building was purchased, what was the value?  
N.....
14. Whether a house is constructed from the scratch or a fully erected building is purchased, how did you finance your house acquisition? (Tick one or more boxes as applicable)
- |    |                          |                             |
|----|--------------------------|-----------------------------|
| 1. | <input type="checkbox"/> | Mortgage Institution        |
| 2. | <input type="checkbox"/> | Universal Bank              |
| 3. | <input type="checkbox"/> | Relatives and Friends       |
| 4. | <input type="checkbox"/> | Personal Savings            |
| 5. | <input type="checkbox"/> | Money from abroad           |
| 6. | <input type="checkbox"/> | Loan from employer          |
| 7. | <input type="checkbox"/> | Sold another house          |
| 8. | <input type="checkbox"/> | Private lender              |
| 9. | <input type="checkbox"/> | Other (Please specify)..... |
15. If you borrowed, what was the rate of interest at the beginning of the transaction .....
16. What is the rate of interest presently? .....
17. If you have obtained a loan, how do you intend to repay it? (Tick all that apply)



1. ☐ Extra work
2. ☐ Employment income
3. ☐ Reducing household expenditure
4. ☐ Sale of valuables
5. ☐ Other sources (Please specify).....

**18. If you have a loan, what security was given for the loan (Tick all that apply)**

1. ☐ The Property
2. ☐ Another Property
3. ☐ Agricultural Land
4. ☐ Others (Please specify).....

**19. What is the repayment period for the loan? (Tick one box)**

1. ☐ Less than 24 months
2. ☐ 25-48 months
3. ☐ 49-96 months
4. ☐ 97-144 months
5. ☐ Others (Please specify).....

**20. Are you up to date with your loan repayments?**

1. ☐ Yes
2. ☐ No

If Yes go to Q 23, if No go to Q 21

**21. If No, How many months are you behind? (Tick one box)**

1. ☐ 3-6 months
2. ☐ 7-12 months
3. ☐ Over 12 months
4. ☐ Others (Please specify).....

**22. What is the reason(s) for default in loan repayment? (Tick one box)**

1. ☐ Loss of Income
2. ☐ Higher financial commitment
3. ☐ Excessive Interest charges
4. ☐ Others (Please specify).....

**23. What is the Present Value of your property? (Tick one box)**

1. ☐ Less than N100, 000

2. ☐ N100,001- N500,000
3. ☐ N500,001-N1,000,000
4. ☐ Above N1,000,000
5. ☐ Don't know

**24. The processing of loan applications with the financial institutions usually go through a long process, were you satisfied with the time taken to process? (Tick one box)**

1. ☐ Very satisfied
2. ☐ Satisfied
3. ☐ Dissatisfied
4. ☐ Very Dissatisfied

**25. On application, what percentage of the loan requested did you get? (Tick one box)**

1. ☐ 50%
2. ☐ 60%
3. ☐ 75%
4. ☐ 100%
5. ☐ Other (Please specify).....

**26. Where did you obtain the remainder of the funds needed for your house acquisition? (Tick all that apply)**

1. ☐ From friends and families
2. ☐ Private lenders
3. ☐ Employer
4. ☐ Others (Please specify).....

**27. If a loan was available, would you be willing to borrow to buy another house? (Tick one box)**

1. ☐ Yes
2. ☐ No
3. ☐ Don't know

**28. What kind of security can you offer for a loan? (Tick all that apply)**

1. ☐ The house itself
2. ☐ Any other property
3. ☐ Agricultural land
4. ☐ Others (Please specify).....

**29. How much do you save per month? (Tick one box)**

1. ☐ Nothing
2. ☐ N0 - N499
3. ☐ N500 – N999
4. ☐ Above N1,000

**30. What are your Total Household savings at present? (Tick one box)**

1. ☐ Nothing
2. ☐ N0 – N4,999
3. ☐ N5,000 – N9,999
4. ☐ Above N10,000

**31. Where do you save? (Tick all that apply)**

1. ☐ Universal Bank
2. ☐ Government Savings Schemes
3. ☐ Mortgage Institution
4. ☐ Ajo/ Esusu (Traditional Contributions)
5. ☐ Other (Please specify).....

**32. What is your personal income per month? (Tick one box)**

1. ☐ N0 – N9, 999
2. ☐ N10,000 – N19,999
3. ☐ N20,000 – N29,999
4. ☐ N30,000 – N39,999
5. ☐ Other (Please specify).....

**33. What is the total family income per month? (Tick one box)**

1. ☐ N0 – N9, 999
2. ☐ N10,000 – N19,999
3. ☐ N20,000 – N29,999
4. ☐ N30,000 – N39,999
5. ☐ Other (Please specify).....

**Thank you for participating in this Research. Please return questionnaire**



## APPENDIX V: EXTRACTED FIGURES FROM UDMBs BALANCE SHEETS

S/N	Bank No	Share Capital N (m)	Reserves N (m)	Customer Deposits N (m)	Demand deposit as % of Total Dep.	Other Liabilities N (m)	Loan to Housing N (m)	Loan to Manufacturing N (m)	Loan to Commerce N (m)	Loan to Agric N (m)	Total Investment N (m)	CRR	Fixed Assets	Total Loans & Advances	total bank assets	Competition Index %
1	11(03)	3,373	7,114	51,068	67.1	19,785	906	7,980	10,086	1,306	6,530	2,822	2,778	30,663	83,311	0.991757
2	11(04)	3,673	9,295	74,222	62.89	28,982	1,631	14,604	18,962	2,286	24,115	2,561	4,023	43,676	119,698	0.988156
3	11(05)	24,392	11,776	95,563	54.04	29,256	3,426	16,064	53,093	2,514	32,333	5,781	7,400	65,035	167,898	0.983387
4	11(06)	24,392	16,254	212,834	38.02	34,542	5,003	18,385	63,335	3,083	116,429	7,278	11,729	83,477	305,080	0.969813
5	11(07)	25,392	22,041	290,792	46.49	73,188	11,891	22,177	82,036	4,694	167,700	7,843	19,749	113,705	478,369	0.952667
6	8(03)	3,163	21,877	196,427	54.38	88,415	9,424	27,537	18,192	5,559	101,569	12,164	8,620	56,046	320,578	
7	8(04)	11,331	27,290	206,643	44.62	55,704	11,536	36,345	19,288	3,765	109,747	13,898	9,564	78,040	312,490	0.96908
8	8(05)	11,760	32,912	264,988	43.74	55,157	12,155	38,300	28,071	2,524	124,790	19,601	12,108	114,673	377,496	0.962648
9	8(06)	18,477	42,503	390,846	49.96	75,843	10,870	59,772	37,400	3,605	266,074	16,307	13,952	175,657	540,129	0.946556
10	8(07)	21,036	56,315	581,827	50.11	58,773	17,919	72,995	23,601	1,116	433,221	13,118	16,850	219,185	762,881	0.924515
11	20(03)	16,490	16,240	224,315	34.82	64,036	10,599	20,098	8,637	2,364	222,758	15,839	11,212	54,560	366,677	0.963718
12	20(04)	16,910	17,582	231,526	29.56	79,733	7,176	26,211	14,836	2,361	241,024	13,176	12,401	78,338	418,728	0.958568
13	20(05)	17,469	21,660	200,511	41.9	146,267	10,445	23,286	12,088	21,296	64,462	18,062	14,482	78,684	550,983	0.945482
14	20(06)	70,927	24,758	252,418	39.22	133,452	13,714	20,361	9,341	2,231	82,977	10,969	20,612	116,060	667,766	0.933926
15	20(07)	59,207	37,423	417,406	43.0	82,116	14,926	23,667	18,005	6,968	381,172	8,786	25,029	149,376	699,247	0.930811
16	6(03)	2,450	3,716	25,838	53.69	3,469	68	2,669	8,070	4,963	4,227	2,287	2,623	15,305	36,207	0.996417
17	6(04)	2,450	5,973	33,752	45.1	4,386	62	2,295	11,223	1,149	8,457	2,005	2,770	17,506	47,406	0.995309
18	6(05)	3,000	7,934	34,142	47.18	9,910	130	4,084	8,367	2,028	13,457	2,166	3,709	18,825	56,034	0.994456
19	6(06)	17,000	11,405	72,767	51.75	7,429	405	3,754	14,341	1,108	42,320	2,375	7,303	29,579	109,740	0.989142
20	6(07)	17,000	15,121	82,576	53.57	5,318	18	5,017	20,973	1,340	59,269	1,817	7,106	32,543	130,440	0.987093
21	19(06)	5,276	21,043	68,638	55.7	7,634	7,420	9,984	15,748	1,318	29,602	3,578	7,217	38,946	109,664	0.989149
22	19(07)	5,276	21,524	92,374	65.65	11,634	6,074	17,433	14,353	1,454	40,046	1,711	4,864	45,958	145,975	0.985556
23	23(05)	19,533	4,275	61,284	45.22	11,673	3,335	8,711	49,891	1,136	22,734	4,508	4,164	46,183	97,909	
24	23(06)	22,727	-2,188	85,605	46.38	13,654	3,379	9,376	49,709	1,075	14,906	3,344	7,147	53,702	120,109	
25	23(07)	22,727	2,455	125,475	56.09	14,022	3,441	9,136	53,199	972	31,883	2,134	11,716	68,797	165,081	

## Appendix VI: Regression Residuals for Test Model

**Variables Entered/Removed<sup>a</sup>**

Model	Variables Entered	Variables Removed	Method
1	A-R factor score 1 for analysis 1		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
2	A-R factor score 2 for analysis 1		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
3	A-R factor score 3 for analysis 1		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a. Dependent Variable: Loan to Housing N (m)

**Excluded Variables<sup>c</sup>**

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics		
						Tolerance	VIF	Minimum Tolerance
1	A-R factor score 2 for analysis 1	.389 <sup>a</sup>	4.072	.001	.656	1.000	1.000	1.000
	A-R factor score 3 for analysis 1	.262 <sup>a</sup>	2.311	.031	.442	1.000	1.000	1.000
2	A-R factor score 3 for analysis 1	.262 <sup>b</sup>	3.307	.003	.585	1.000	1.000	1.000

a. Predictors in the Model: (Constant), A-R factor score 1 for analysis 1

b. Predictors in the Model: (Constant), A-R factor score 1 for analysis 1, A-R factor score 2 for analysis 1

c. Dependent Variable: Loan to Housing N (m)

**Collinearity Diagnostics<sup>a</sup>**

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions			
				(Constant)	A-R factor score 1 for analysis 1	A-R factor score 2 for analysis 1	A-R factor score 3 for analysis 1
1	1	1.000	1.000	1.00	.00		
	2	1.000	1.000	.00	1.00		
2	1	1.000	1.000	.00	1.00	.00	
	2	1.000	1.000	1.00	.00	.00	
	3	1.000	1.000	.00	.00	1.00	
3	1	1.000	1.000	.00	1.00	.00	.00
	2	1.000	1.000	.00	.00	1.00	.00
	3	1.000	1.000	.00	.00	.00	1.00
	4	1.000	1.000	1.00	.00	.00	.00

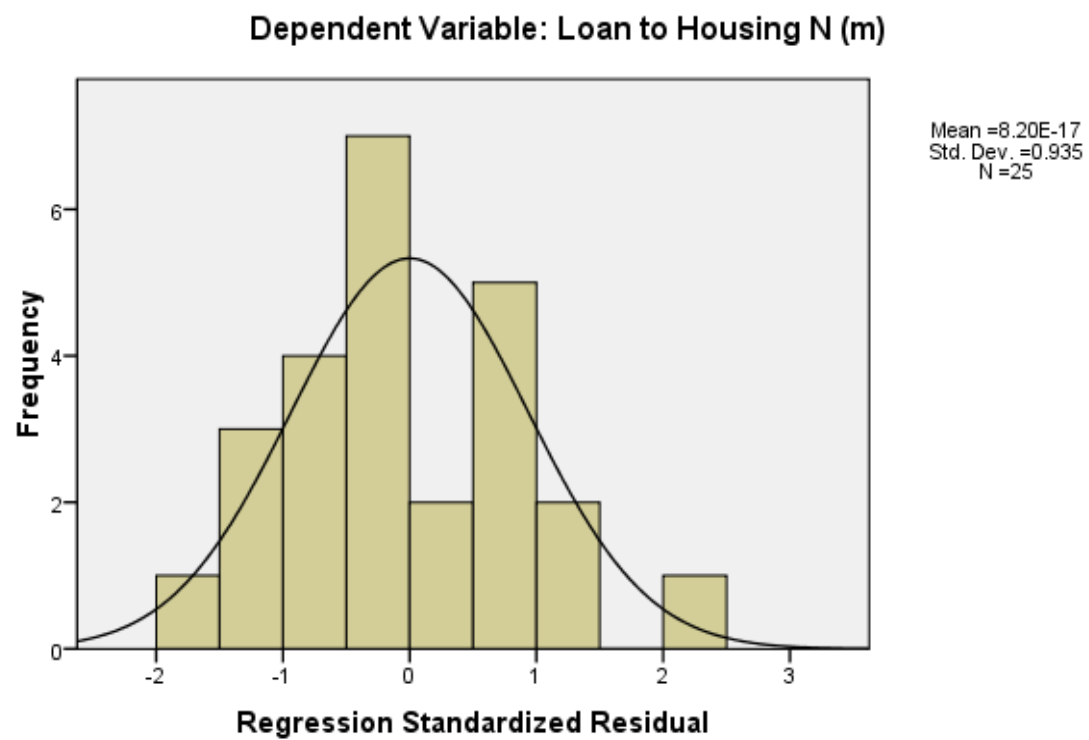
a. Dependent Variable: Loan to Housing N (m)

**Residuals Statistics<sup>a</sup>**

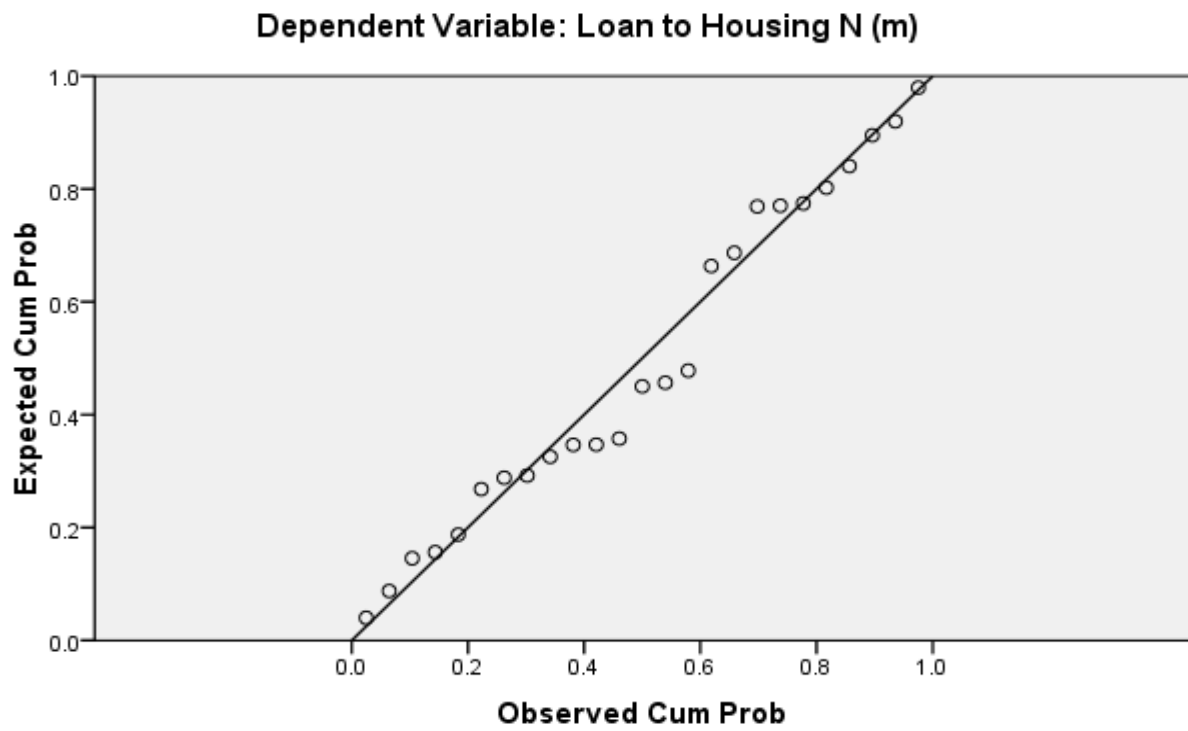
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	827.2177	18147.7734	6638.1200	5029.15778	25
Residual	-3669.73657	4280.89258	.00000	1960.05672	25
Std. Predicted Value	-1.155	2.289	.000	1.000	25
Std. Residual	-1.751	2.043	.000	.935	25

a. Dependent Variable: Loan to Housing N (m)

## Histogram



# Normal P-P Plot of Regression Standardized Residual



## Scatterplot

